ARIZONA

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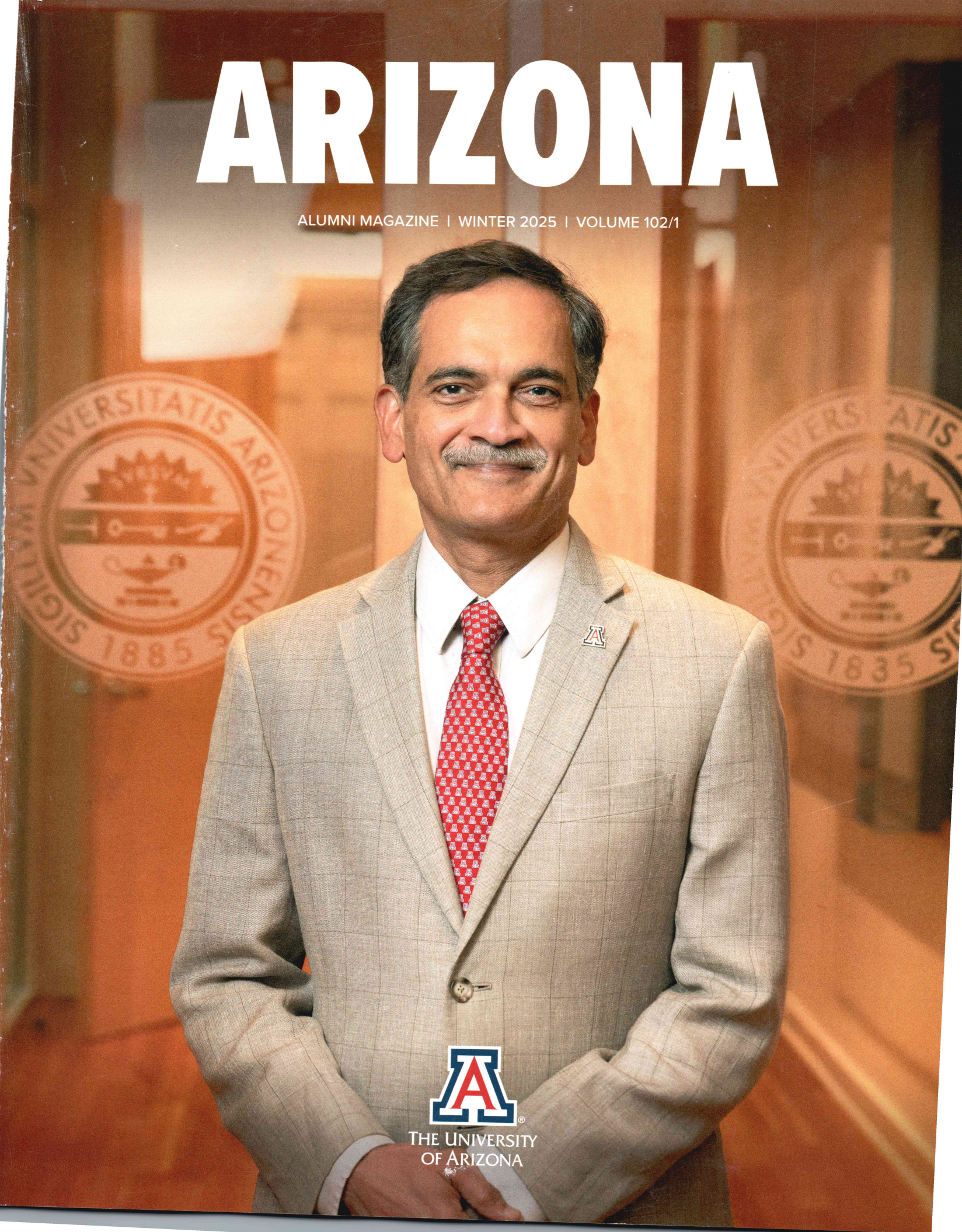

THE UNIVERSITY OF ARIZONA

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LAND ACKNOWLEDGMENT

We respectfully acknowledge the University of Arizona is on the land and territories of Indigenous peoples. Today, Arizona is home to 22 federally recognized tribes, with Tucson being home to the O'odham and the Yaqui. Committed to diversity and inclusion, the university strives to build sustainable relationships with sovereign Native Nations and Indigenous communities through education offerings, partnerships and community service.

The University of Arizona Mall
Photo: Andrew Bourland

Correction: A photo caption in the 2024 Fall Alumni Magazine story "Family Plan" incorrectly cited Hom Moon Jung as the recipient of a Congressional Medal of Honor. The medal, correctly identified in the story itself, was the Congressional Gold Medal. We regret the error.

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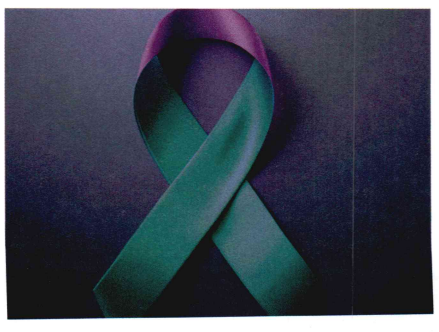
A year ago, Eller College of Management lecturer Daniel Kinnear lost his brother to suicide. Now he's raising awareness about mental health issues on campus and funding programs he wishes he'd known about before.

Please be advised that this story discusses suicide and suicidal thinking.



ARIZONA

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LETTERS TO THE EDITOR
Share your magazine feedback by submitting a letter to the editor at alumnienews@uafoundation.org.

Leadership Message

President Suresh Garimella and his wife Lakshmi
Photo: Chris Richards

Thank you for the warm welcome I have received here in Tucson. The Sonoran Desert is a tad bit different from Vermont, but Lakshmi and I are already starting to feel at home.

When I think about this great institution, I think about potential. Potential for excellence. Potential for even greater impact. Potential for connection to our community in Tucson and Pima County and across all of Arizona.

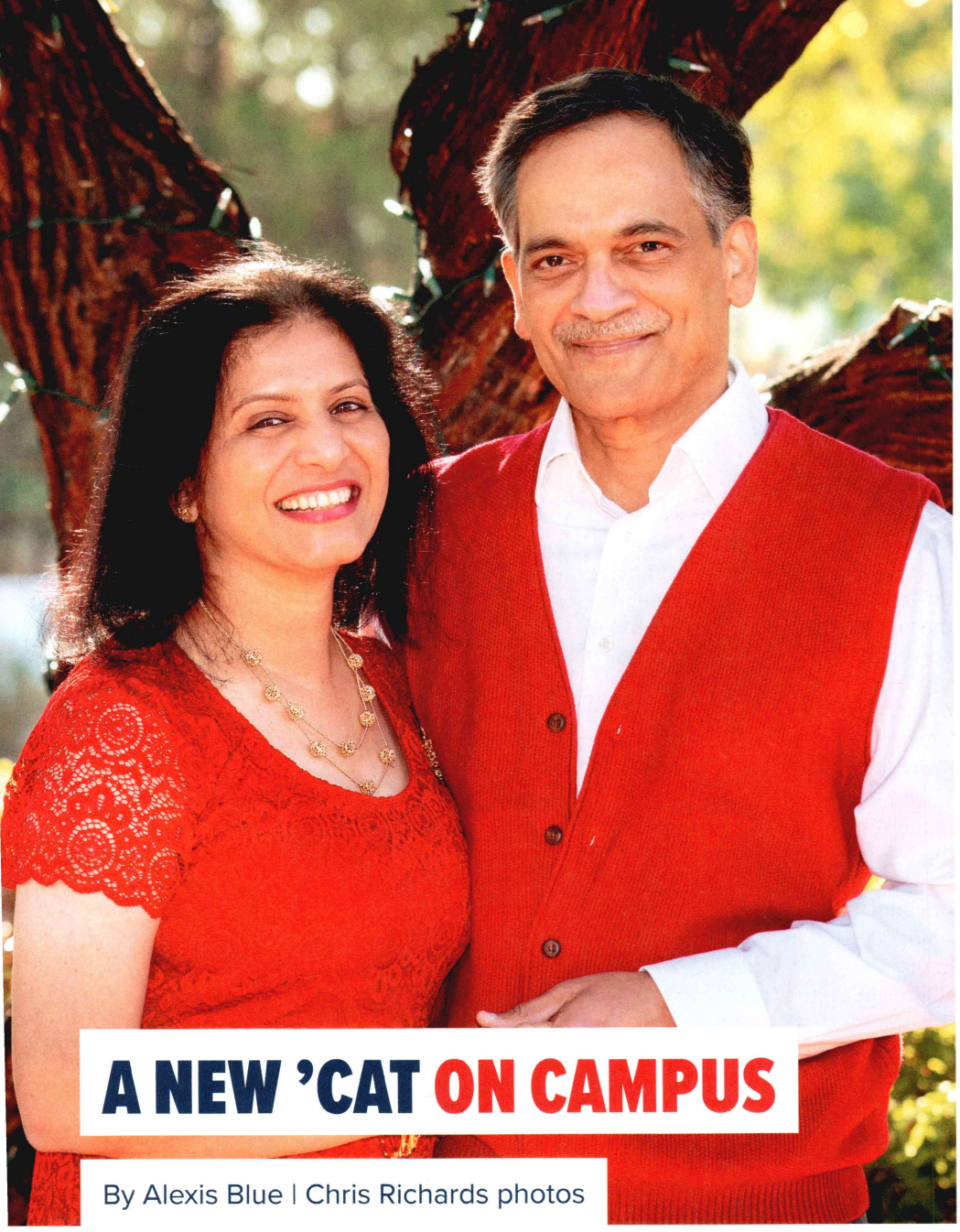
As Arizona's flagship land-grant university, we have a unique commitment to the state and its people. Reading the stories in this magazine, you can feel that commitment, whether it's through the research being done into how to make agriculture more sustainable in the face of climate change (Page 42), or through the mental-health initiatives that support our students as they make the extraordinary adjustment from high school to college and college to the world beyond (Page 32). Success starts with opportunity, and making those opportunities accessible to everyone — even if just through a helping hand at a difficult time — is essential to our mission.

There's fun to be had, too. Imagine the incredible journeys of the 15th-century altarpiece paintings shipping out from the university's art museum for restoration (Page 26); the explosion of pickleball on campus (Page 56); and the great research being done by our cognitive science department in the field of spontaneity — something I imagine we could all use a little more of in our lives (Page 22).

There is no institution in the state as comprehensive as we are in terms of reach and depth of expertise. I think, again, about potential. We have so much to build on as we advance our mission and impact. I look forward to building together.

Bear Down,
Suresh Garimella
President
University of Arizona

The lighting of 'A' Mountain signaled the start of Homecoming week, Oct. 13-19.
Photo: Chris Richards



A NEW 'CAT ON CAMPUS

By Alexis Blue | Chris Richards photos

October marked the start of a new era for the University of Arizona, when Suresh Garimella joined the Wildcat Family as the University of Arizona's 23rd president.

Garimella spent the remainder of the first semester connecting with students; getting to know university leaders, including faculty, staff and campus safety officials; and visiting with alumni and donors.

His eagerness to dive into the job comes as no surprise to those familiar with Garimella's work ethic — something he says his parents instilled in him at an early age.

Garimella was the youngest of three children growing up in India. His father worked as an engineer, and his mother was a housewife. Neither had college degrees, and they stressed the importance of education to their children.

"Every day, we'd come home and do all our homework while they looked over our shoulders," Garimella says. "My parents wanted us to do well, and they sacrificed a lot for us. We are better off now because of their support and example."

When Garimella was young, education represented a ticket to a better life. That ticket would eventually take him to the Indian Institute of Technology Madras, where he received a bachelor's degree in mechanical engineering, then to The Ohio State University and the University of California, Berkeley, where he earned advanced degrees before embarking on a successful professional career in academia.

Garimella comes to the U of A from the University of Vermont (UVM), where he had served as president since 2019.

Tucson, on its face, has a lot to offer a New Englander considering a change of employment: mild winters, 350 days of sunshine and abundant access to guacamole (Garimella's favorite food). But, of course, there were bigger factors at play in Garimella's decision to take the job in the desert.

The university's diverse campus, strong research enterprise and status as a land-grant university — a distinction shared by UVM — all appealed to Garimella.

Land-grant institutions, with their

mission of teaching, research and public service, have an important role to play in their communities, Garimella says, and he has vowed to do his best to make the university a strong partner to the state and region.

On the university's land-grant mission, Garimella notes the importance of service:

"Our focus as a land-grant university is one of service to the state — its people and communities," he says. "We have a responsibility to make opportunity available and create the environment where many more people can thrive."

Part of the land-grant mission is making a university education as accessible and affordable as possible, something Garimella worked to do at UVM when he froze tuition rates for all university students throughout his presidency. He also continued to work with students hands-on, teaching an annual undergraduate seminar on civil discourse. This direct engagement with students has been a priority his entire career. Garimella has mentored more than 65 undergraduate students who worked in his lab, as well as 90 graduate students and 50 post-doctoral scholars, 29 of whom hold prestigious faculty positions around the world.

Garimella, who also has been appointed a University Distinguished Professor at the U of A, has vowed to continue making students his No. 1 priority, calling them the "heartbeat" of the university.

"We're here for our students and their success," he says. "Everyone at the university has a part to play in creating the environment where students can thrive, and staying in touch with them is so important to be able to do that effectively. I'm really looking forward to getting to know our students."

This year, the university's heartbeat got a little bit stronger when the U of A welcomed its most diverse class in history, with more than 9,300 well-prepared incoming first-year students joining the Wildcat Family.

Garimella's advice to those students: "Remember that your goals are why you're here, and work hard — but also leave time for curiosity about the world, for reading and for connection with those around you."

His own academic journey was already taking shape by the time he was 12 years old. He knew then that he wanted to one day become a researcher. He was initially accepted to medical school but chose to pursue mechanical engineering instead. He is now a highly cited scholar in his field, having co-authored more than 625 research publications. Specifically, his work focuses on energy efficiency in electronics, renewable and sustainable energy systems, and thermal and energy transport at microscales and nanoscales.

President Garimella's extensive research background makes him well suited to lead the U of A, a Research 1 institution with $1 billion in annual research expenditures.

Under his leadership at UVM, the university's research enterprise more than doubled. Prior to that, Garimella served as executive vice president for research and partnerships and a distinguished professor at Purdue University in Indiana, also a land-grant institution.

Other accomplishments on his resume: He was elected a fellow of the National Academy of Inventors, the American Association for the Advancement of Science, and the American Society of Mechanical Engineers. He is a member of the National Science Board, which oversees the National Science Foundation. He also has served as a Jefferson Science Fellow at the U.S. Department of State, lending his scientific expertise on national and international policy issues.

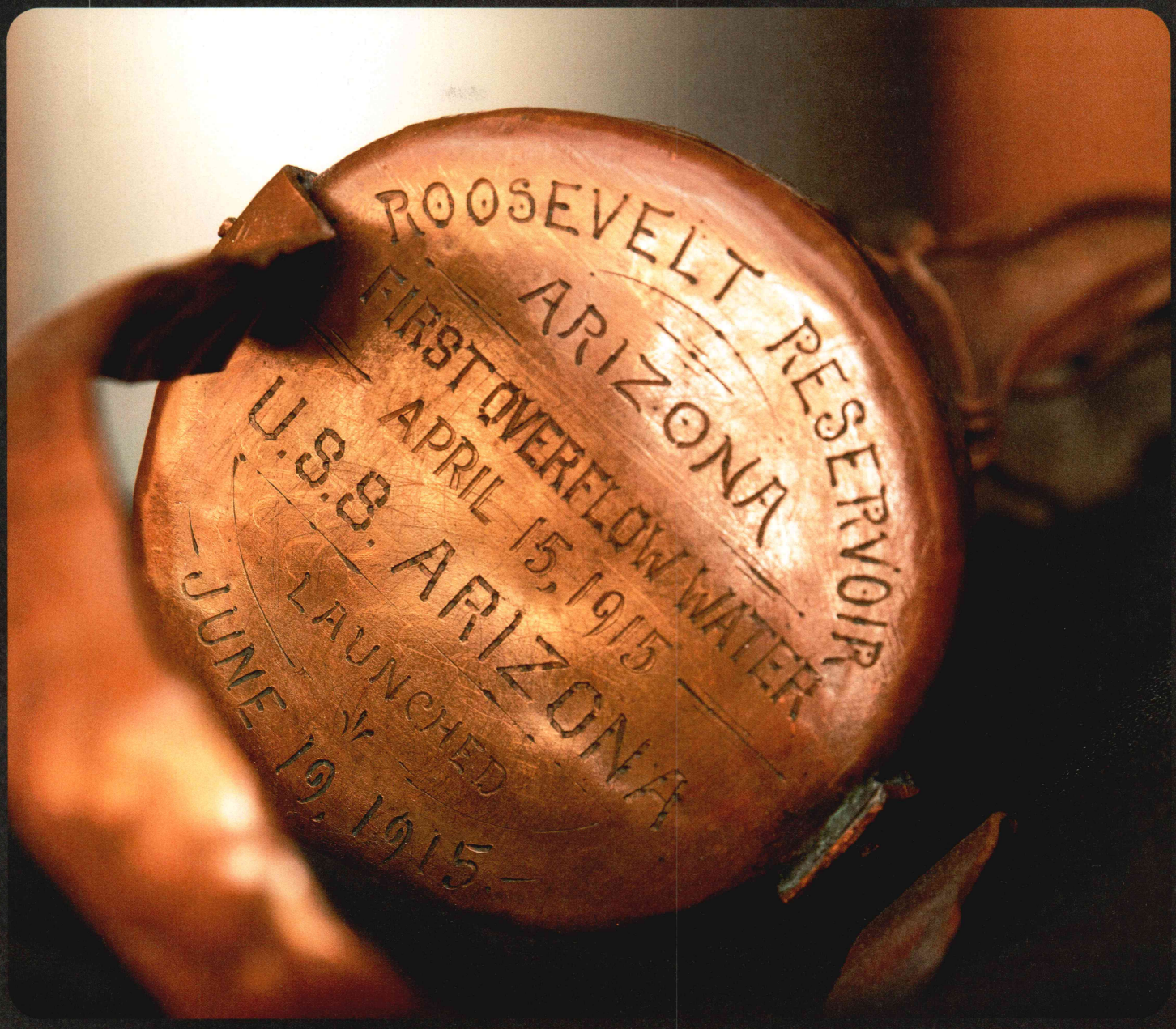
The Arizona Board of Regents unanimously approved Garimella's appointment as president following a national search led by an 18-member committee that included regents, U of A faculty and staff, a student, and community and business leaders. During the search, ABOR and the search committee gathered feedback from more than 4,200 students, employees and community members through listening sessions, individual meetings, public town halls and a campuswide survey.

Garimella now calls Tucson home with his wife, Lakshmi. The couple has two children, daughter Shruthi, a doctoral student at the University of California, Davis, and son Sanjay, also a doctoral student, at the Massachusetts Institute of Technology. ◆

FUN FACTS ABOUT

PRESIDENT GARIMELLA

- He has visited every continent.
- He considers himself a movie buff, and his favorites include "Doctor Zhivago" and "Lawrence of Arabia."
- He speaks Hindi and Telugu, the language of the southern Indian state of Andhra Pradesh. He also learned Sanskrit and some French during his time in Algeria, where his father was posted for a time.
- He learned to in-line skate in college.
- His favorite time of year is when students come back to campus.



SUBJECT / OBJECT: *USS ARIZONA*

On June 19, 1915, the super-dreadnought *USS Arizona* launched from the Brooklyn Navy Yard on New York City's East River. Named for what was then the union's youngest state, it was, at the time, the largest ship in the Navy. Arrangements for the launch had been made for 50,000 people; an estimated 75,000 ultimately attended, among them 17-year-old Esther Ross of Prescott, who had the honor of christening the ship with not one but two bottles: one with sparkling wine from Ohio and the other with what was described in etching on the bottle's copper mesh as "first overflow water" from the Roosevelt Dam, collected a couple of months earlier — a concession to Arizona's recent ban on alcohol. The latter is now held as item AZ 517 of the *USS Arizona* collection at the University of Arizona Special Collections Libraries. Ross, who was called on to reenact the christening more than 60 years later over the spot where the original ship was sunk in Pearl Harbor, had practiced the moment for months, smashing syrup bottles of water against a fence behind her house after school. ◆ — Mike Powell | Chris Richards photos

NEWS UPDATES

Photo: Chris Richards

Planting the University of Arizona's second Moon Tree
Photo: University of Arizona Health Sciences

A sweetgum from space

One afternoon in early November, a group of about 50 people gathered on the north side of Flandrau Science Center and Planetarium to watch the planting of a small tree. It looked like an ordinary tree: brown trunk, green leaves. But unlike most ordinary trees — or even extraordinary ones, for that matter — this tree had been grown from seeds that spent 25 and a half days orbiting the moon as part of NASA's Artemis I mission.

The moon! Imagine that. And now it's here in Tucson, putting down roots. We really do come from all over.

It's a nice addition to campus. It's also a living symbol of some of the groundbreaking research that has been done here over the years: Think, for example, about the samples OSIRIS-REx brought back from the asteroid Bennu that might hold clues to the beginning of life on Earth. And this moon tree, a sweetgum, is not the university's first; a sycamore nearby was given to us by NASA after spending time on the Apollo 14 flight back in 1971 — a gift reflecting the Lunar and Planetary Lab's work in creating some of the images that led to our earliest lunar missions. This is how we bridge the high-tech with the elemental, the future with the past. This is the work our faculty and staff do.

Among the speakers at the planting was Campus Arboretum Director Tanya Quist, who says the two questions she gets a lot are: What is the campus arboretum, and where can I find it? The answer to the first question is that it's a kind of living museum. And like all museums, it is, on some level, a collection designed for research, education and outreach.

As for the second question, just stand on campus and look around: The museum is everywhere.

Probing the mysteries of consciousness

In September, the University of Arizona's Arizona Astrobiology Center announced a $1 million gift to support interdisciplinary research exploring the origins of life and consciousness from Eugene Jhong, a retired Google software developer and philanthropist.

"I believe a shift is occurring in

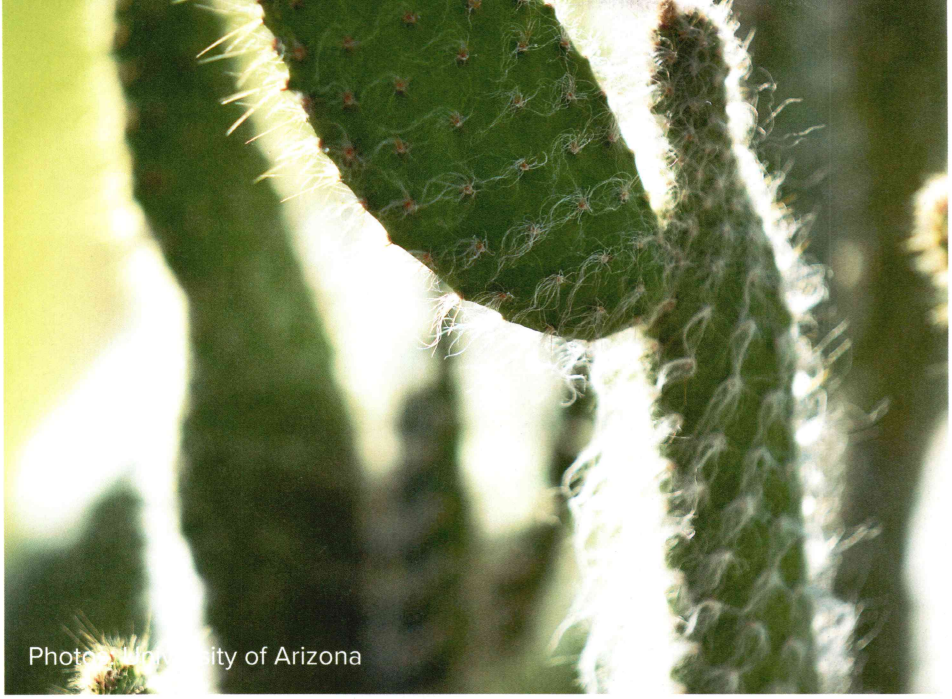
Photo: Adobe Stock

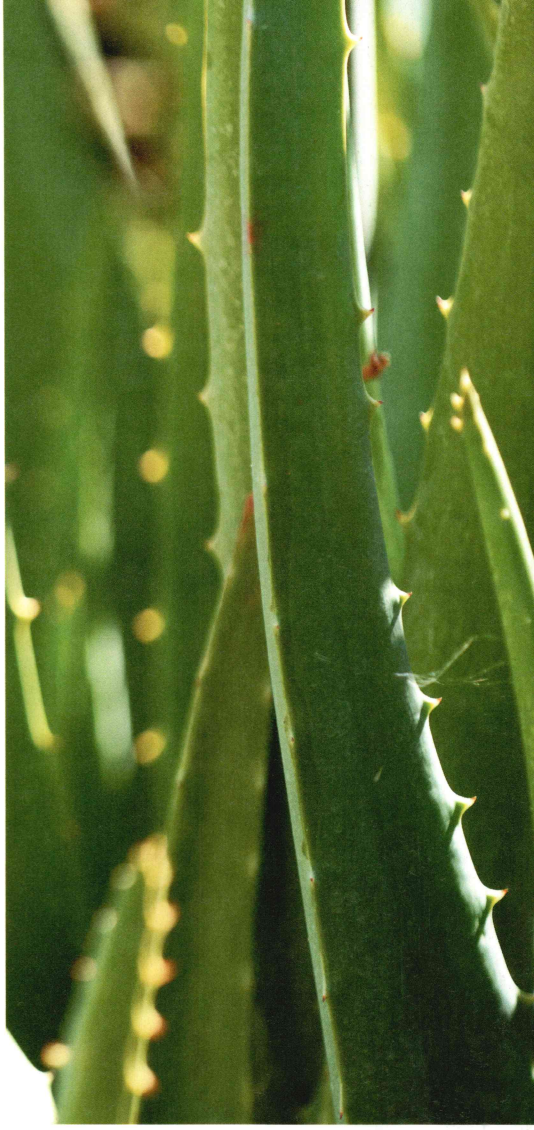
consciousness studies, embracing ideas that historically have been shortsightedly dismissed by the scientific community," Jhong says. "The University of Arizona has long been home to some of the brightest minds and most innovative ideas in this field. I am proud to support the expansion of this research through the Arizona Astrobiology Center."

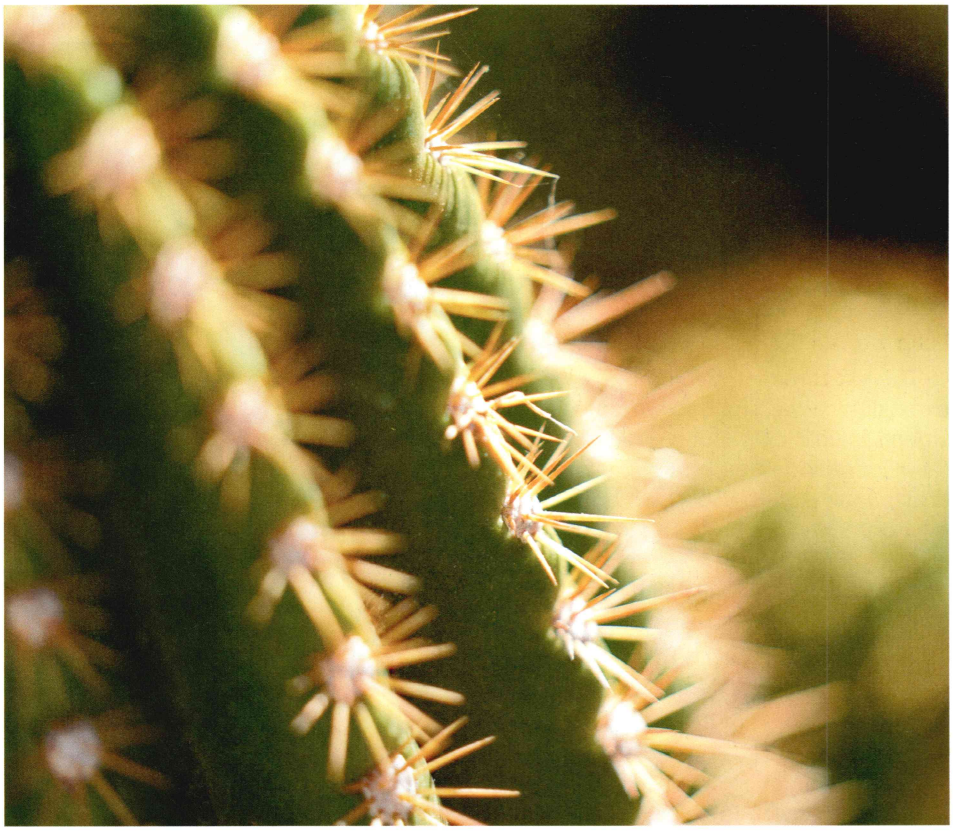
Bringing together insights from philosophy, psychology and neuroscience, the field of consciousness studies explores vital questions about what it means to be conscious, how thoughts and feelings emerge in the brain and how inner experience connects to the outside world.

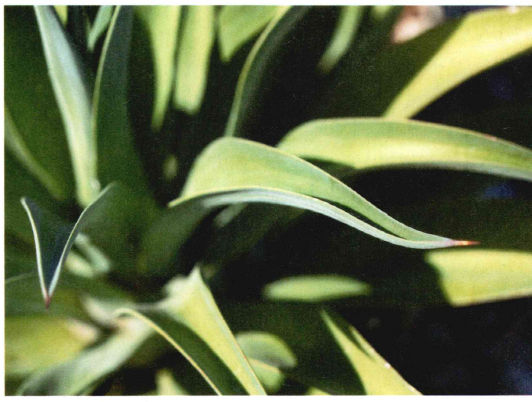
"This generous gift from Mr. Jhong enables us to bridge two of humanity's most profound questions: How did life begin, and what does it mean to be conscious?" says Dante Lauretta, U of A Regents Professor of planetary sciences and the center's director. "By combining astrobiology and consciousness studies, we have the opportunity to unravel some of the deepest mysteries of our existence."

With Jhong's gift, the Arizona Astrobiology Center also is poised to expand the university's cutting-edge space science exploration into the realm of consciousness, linking the study of extraterrestrial materials — like the samples from the asteroid Bennu collected during the OSIRIS-REx mission — with deep questions about the human experience.









"The ancient materials from Bennu offer a rare chance to study the origins of life, and through that lens, we hope to explore the potential connections between those origins and the emergence of consciousness," Lauretta says. "This groundbreaking research could redefine our understanding of life's complexity both on Earth and beyond."

Planning for heat

In mid-November, the Arizona Board of Regents held a showcase at the U of A's Arizona Experiment Station to highlight new research about how to take care of our desert plants in the increasingly hot conditions now faced by the urban desert year-round.

The research, which was conducted as part of ABOR's Regents' Grants program, includes machine-learning models developed at Arizona State University showing how smart irrigation techniques can be scaled to fit the needs of local communities. From there, the research team will host everyone from state legislators to community organizers to housing developers to demonstrate how these techniques can be scaled, implemented and meaningfully applied.

The team was invited to present its findings at the December 2024 conference by the American Geophysical Union, in Washington, D.C., the largest annual gathering of Earth scientists, educators and policymakers in the world. They're also partnering

with the Arizona chapter of the Nature Conservancy to explore solutions to the challenges of heat resilience and water security caused by rapid urban growth and climate change.

The Regents' Grants program is designed to foster unique collaborations leveraging the resources of Arizona's public universities with the practical expertise of state agencies like the Department of Environmental Quality and the Department of Forestry and Fire Management.

Building community

A $1 million grant from the Mellon Foundation's Public Knowledge program to the U of A College of Information Science will help more students — in particular those from historically underrepresented backgrounds — get paid internships in community archives.

The grant will support the work of a collaborative of faculty members from nine universities across the U.S. and Canada, including the U of A, and will place library and information science graduate students with over 40 community archives in the U.S. and Canada.

The principal investigator for the U of A's grant is Jamie A. Lee, associate dean for faculty affairs and associate professor in the College of Information Science. Lee explained that the key difference between an institutional archive — one that might hold records created by or received by a parent institution — and a community archive is that community archives are directed by the communities themselves, meaning that "the members of the communities whose stories the archive aims to tell are deeply involved with how the archive is built and managed."

This is especially important for Black, Latino, Indigenous, LGBTQ and other communities historically given short shrift in institutional spaces. "Community archives can offer a fuller dimension about what it means, locally, to live in the borderlands," Lee says. "The idea is for students to be at the table with the community and see how community archives work in the process of building a collection, making it accessible, doing outreach" — ideals that resonate with the U of A's status as both a land-grant university and a Hispanic Serving Institution. "You start to see how it's different when the community is involved."

Rainbow connections

A recent study led by John Wiens at the U of A department of ecology and evolutionary biology analyzed the evolutionary timeline of color vision in animals and the different functions of so-called conspicuous colors like red, yellow, orange, blue and purple in animals and plants.

Colors are widely used in communication within and among animal species. Peacocks, for example, proudly display their vibrant tails, adorned with iridescent eyespots, to attract peahens for courtship — a classic example of sexual selection using color signaling. Conspicuous colors are also displayed by toxic animal species, including many venomous snakes and colored poison dart frogs of Central and South America, as a warning to potential predators.

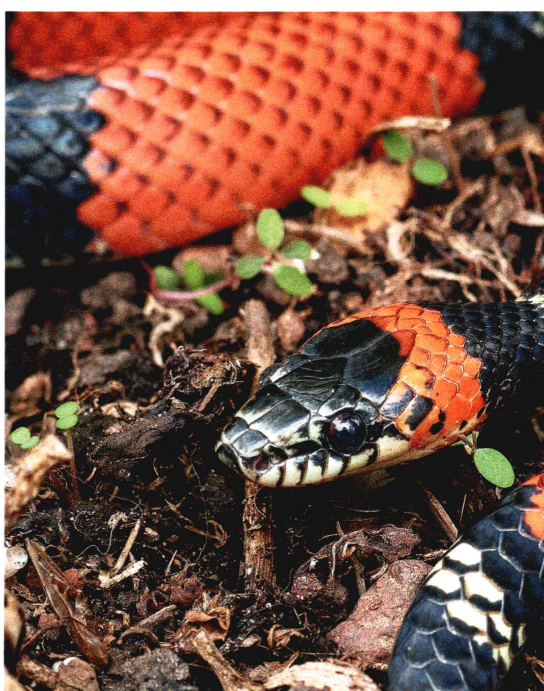
Based on statistical analysis, the study found that color vision evolved in animals about 500 million years ago, more than 100 million years before the emergence of colorful fruits and flowers. Warning color signals emerged around 150 million years ago, followed by sexual color signals 50 million years later.

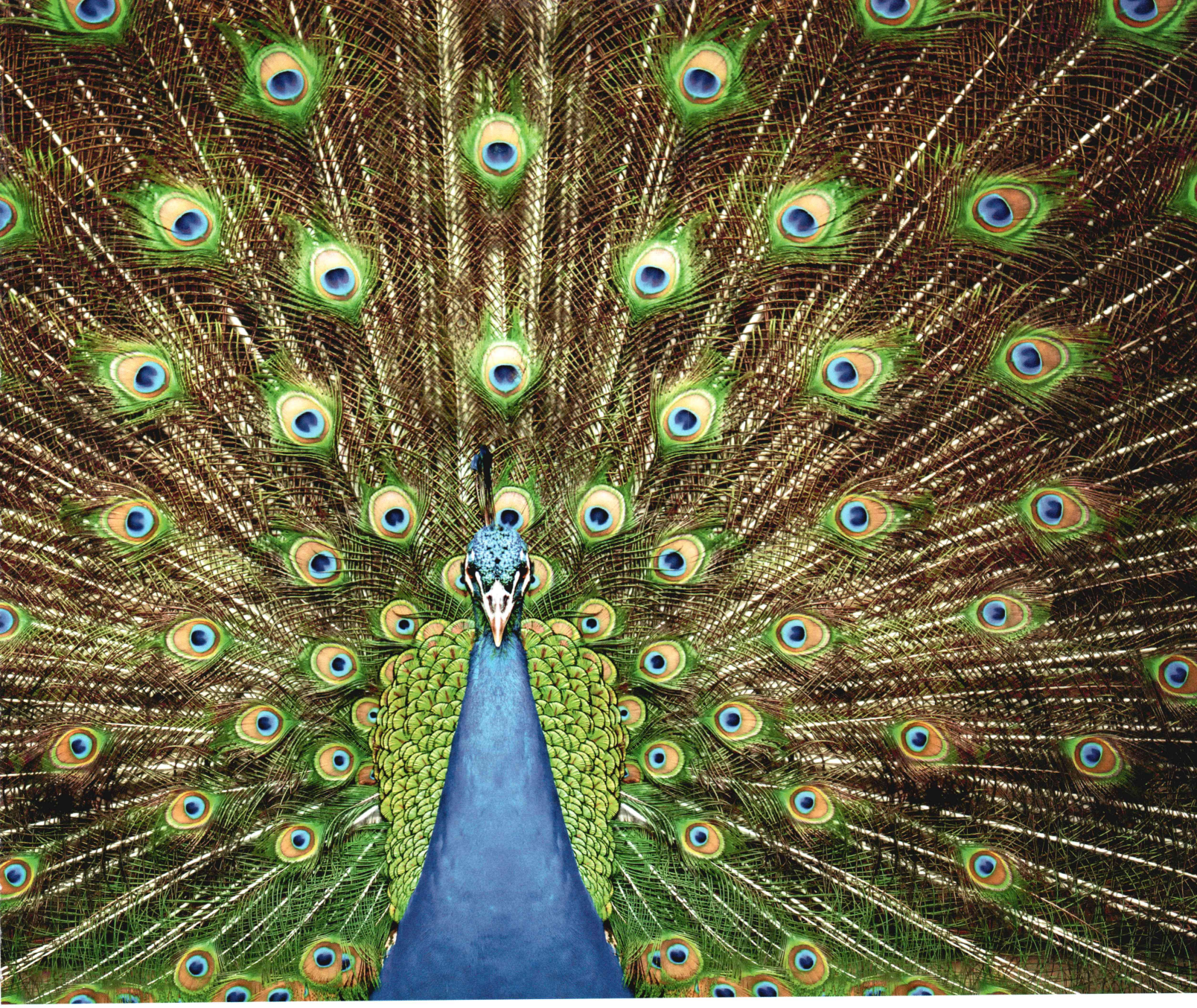
The exact reason behind the explosion of warning and sexual color signals is unknown. But the research team identified three groups that likely drove it: ray-finned fishes in marine environments and birds and lizards on land.

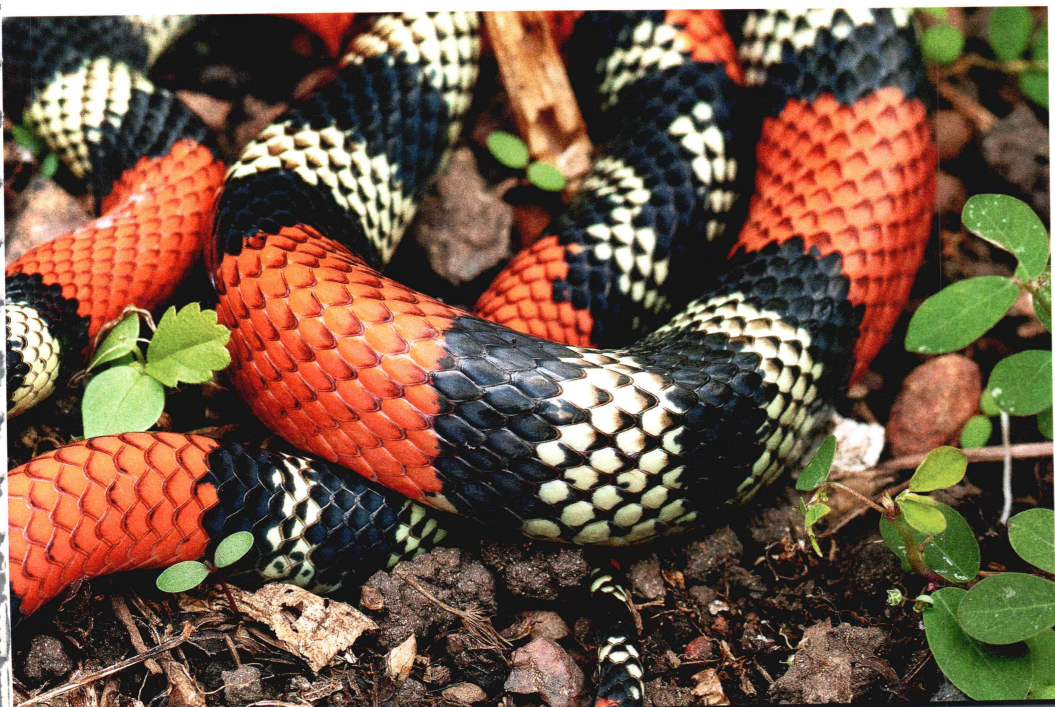
Warning color signals may be so widespread because the colorful animal doesn't need color vision itself to signal other animals of danger. In fact, species with warning color signals don't even need well-developed eyes.

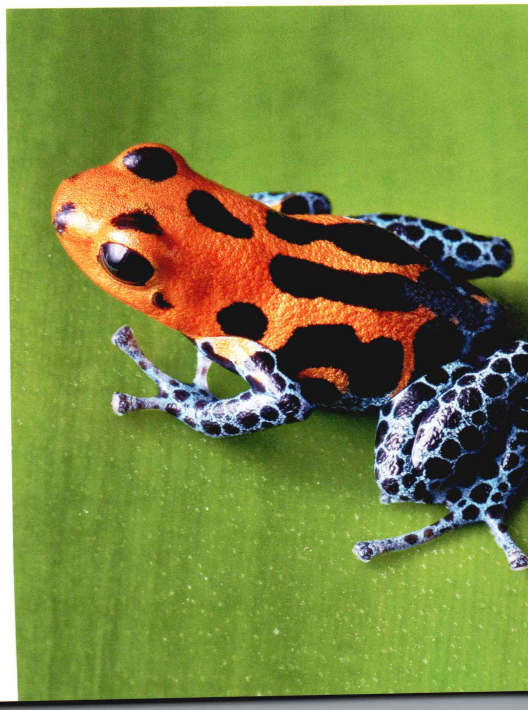
When it comes to sexual color signals, though, males and females need to have advanced vision to signal each other using color cues. That's why sexual signals are exhibited only in two groups of animals that have eyes: vertebrates (including fish, amphibians, mammals, birds and reptiles) and arthropods, such as insects and spiders. ◆

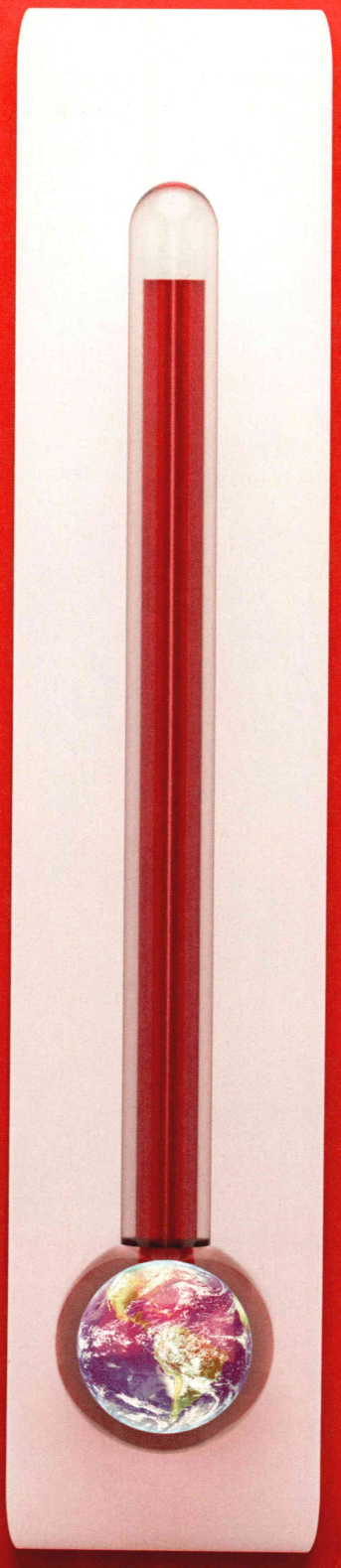
Photos: Adobe Stock











HEAT CHECK

Research shows that Earth's temperature has changed drastically over the last half-billion years — a trend driven by CO2. By Jack Tamisiea and Daniel Stolte

A new study co-led by the University of Arizona and the Smithsonian offers the most detailed glimpse yet into how Earth's surface temperature has changed over the past 485 million years.

Published in the journal Science, the study presents a curve of global mean surface temperature that reveals Earth's temperature has varied more than previously thought over much of the Phanerozoic Eon, a period of geologic time when life diversified, populated land and endured multiple mass extinctions. The curve also confirms Earth's temperature is strongly correlated to the amount of carbon dioxide in the atmosphere.

The start of the Phanerozoic Eon 540 million years ago is marked roughly by the Cambrian explosion, when complex, hard-shelled organisms first appeared in the fossil record. Although researchers can create simulations that look back 540 million years, the temperature curve in the study focuses on the last 485 million years, since there is limited geological data of temperature before then.

"It's hard to find rocks that are that old and have temperature indicators preserved in them — even at 485 million years ago we don't have that many. We were limited with how far back we could go," says study coauthor Jessica Tierney, a paleoclimatologist and professor of geosciences at the University of Arizona and the 2022 recipient of the National Science Foundation's Alan T. Waterman Award.

The researchers created the temperature curve using an approach called data assimilation, which allowed them to combine data from the geologic record and climate models to create a more cohesive understanding of ancient climates.

"This method was originally developed for weather forecasting," says Emily Judd, lead author of the paper and a former postdoctoral researcher at the Smithsonian National Museum of Natural History. "Instead of using it to forecast future weather, here we're using it to hindcast ancient climates."

Refining scientists' understanding of how Earth's temperature has fluctuated over time provides crucial context for understanding modern climate change.

"If you're studying the last couple of million years, you won't find anything that looks like what we expect in 2100 or 2500," says Scott Wing, a co-author on the paper and a curator of paleobotany at the Smithsonian National Museum of Natural History. "You need to go back even further to periods when the Earth was really warm, because that's the only way we're going to get a better understanding of how the climate might change in the future."

The new curve reveals that temperature varied more during the past 485 million years than previously thought. Over the eon, the global temperature spanned 52 to 97 degrees Fahrenheit. Periods of extreme heat were most often linked to elevated levels of the greenhouse gas carbon dioxide in the atmosphere.

"This research illustrates clearly that carbon dioxide is the dominant control on global temperatures across geological time," Tierney says. "When CO2 is low, the temperature is cold; when CO2 is high, the temperature is warm."

The findings also reveal that the Earth's current global temperature of 59 degrees Fahrenheit is cooler than Earth has been over much of the Phanerozoic. But greenhouse gas emissions from human-caused climate change are currently warming the planet at a much faster rate than even the fastest warming events of the Phanerozoic, the researchers say. That speed of warming puts species and ecosystems around the world at risk and is causing a rapid rise in sea level. Some other episodes of rapid climate change during the Phanerozoic have sparked mass extinctions.

Rapidly moving toward a warmer climate could spell danger for humans, who have mostly lived in a 10 degree Fahrenheit range for global temperature, compared to the 45 degree span of temperatures over the last 485 million years, the researchers say.

"Our entire species evolved to an 'ice house' climate, which doesn't reflect most of geological history," Tierney says. "We are changing the climate into a place that is really out of context for humans. The planet has been and can be warmer — but humans and animals can't adapt that fast."

The collaboration between Tierney and researchers at the Smithsonian began in 2018. The team wanted to provide museum visitors with a curve that charted Earth's global temperature across the Phanerozoic.

'Our entire species evolved to an 'ice house' climate, which doesn't reflect most of geological history. We are changing the climate into a place that is really out of context for humans. The planet has been and can be warmer — but humans and animals can't adapt that fast.'

The team collected more than 150,000 estimates of ancient temperature calculated from five chemical indicators for temperature that are preserved in fossilized shells and other types of ancient organic matter. Their colleagues at the University of Bristol, in England, created more than 850 model simulations of what Earth's climate could have looked like at different periods of the distant past based on continental position and atmospheric composition. The researchers then combined these two lines of evidence to create the most accurate curve of how Earth's temperature has varied over the past 485 million years.

Another finding from the study pertains to climate sensitivity, a metric of how much the climate warms as carbon dioxide levels double.

"We found that carbon dioxide and temperature are not only really closely related but related in the same way across 485 million years. We don't see that the climate is more sensitive when it's hot or cold," Tierney says.

In addition to Judd, Tierney and Wing, coauthors on the study are Brian Huber of the Smithsonian, Dan Lunt and Paul Valdes of the University of Bristol and Isabel Montañez of the University of California, Davis.

This research was supported by Roland and Debra Sauermann through the Smithsonian; the Heising-Simons Foundation and the University of Arizona's Thomas R. Brown Distinguished Chair in Integrative Science through Tierney; and the United Kingdom's Natural Environment Research Council. ◆

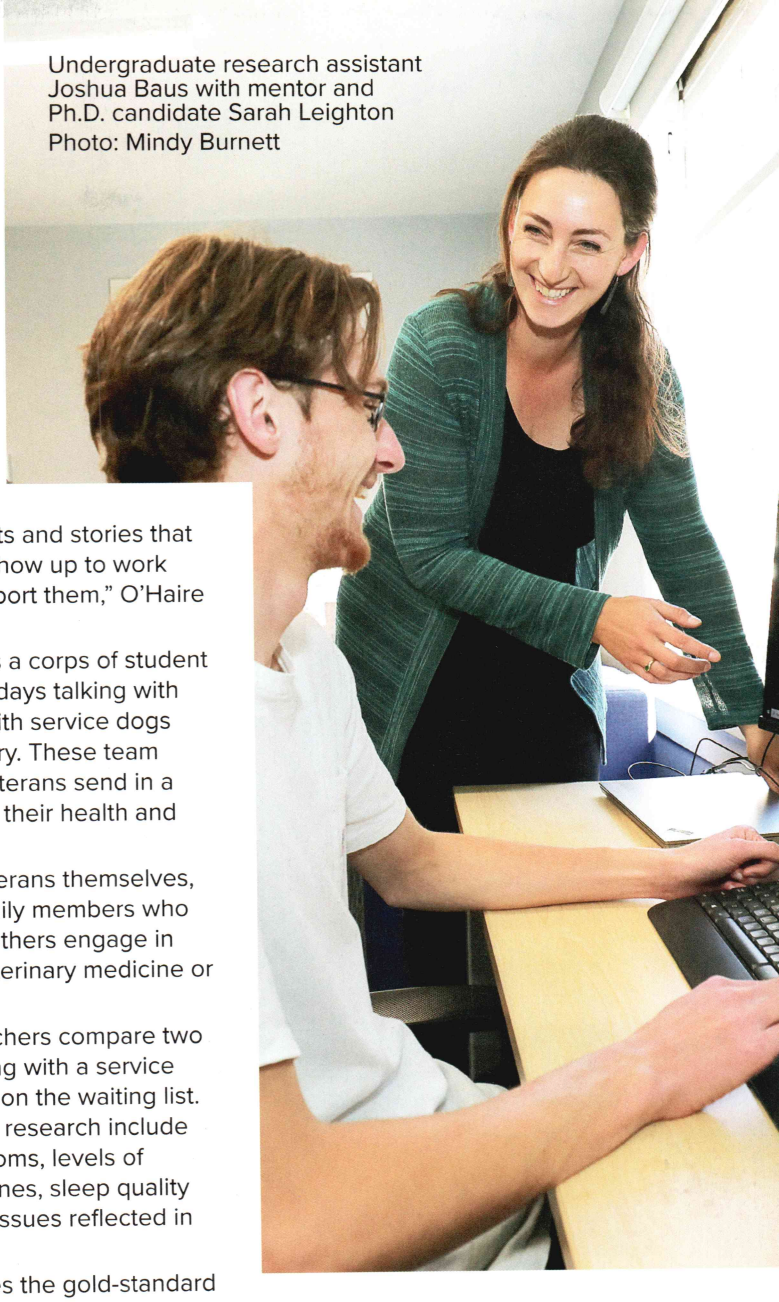
Lead research technician and service member 2nd Lt. Elizabeth Bandin with Yaeger and primary investigator Maggie O'Haire.
Photo: Chris Richards

CREATURE COMFORT

How service dogs are helping to alleviate PTSD

By Ford Burkhart

Bandin with Ralphie
Photo: Chris Richards



Undergraduate research assistant Joshua Baus with mentor and Ph.D. candidate Sarah Leighton
Photo: Mindy Burnett

Every veteran struggling with PTSD knows these moments: Some noise sets you off. A bit of panic sets in.

If you are accompanied by a service dog trained in how to react, you give the command, "Look." Your service dog steps up to watch your back, sending a message: "You are safe." Suddenly, you feel safer.

Over time, the bond between human and canine can be life-changing, says Carly Kramer at K9s For Warriors, a partner with the University of Arizona in research on canine-human interactions.

The cost to obtain a trained service dog can exceed $15,000, most of which is paid by nonprofits like K9s. The U of A's scientific study may help generate more funding to help veterans with PTSD, or post-traumatic stress disorder, get service dogs, and that could help reduce the high volume of stress-related suicide among U.S. veterans.

A dog gets six to eight months of intensive training to help their veteran counter depression or anxiety. Maggie O'Haire, a professor and the associate dean for research at the College of Veterinary Medicine, leads nationwide research funded by $8.4 million from the U.S. Department of Defense and $3.8 million from the National Institutes of Health to analyze the stories told by hundreds of veterans.

Some accounts are profound. Often, someone will tell her, "I would not be alive if it were not for my service dog."

And yet, O'Haire says, many veterans face barriers because there isn't yet enough scientific evidence to support big investments in service dogs.

The U.S. Department of Veterans Affairs reports that approximately 20% of post-9/11 veterans suffer from PTSD. Yet the current wait time to be partnered with a trained service dog can exceed two years.

"It's their statements and stories that motivate me when I show up to work each day to help support them," O'Haire says.

Her staff of 15, plus a corps of student workers, spend their days talking with some 150 veterans with service dogs throughout the country. These team members help the veterans send in a trove of daily data on their health and behavior.

Some staff are veterans themselves, and several have family members who have seen combat. Others engage in academic work in veterinary medicine or psychology.

The U of A researchers compare two groups: veterans living with a service dog and a group still on the waiting list. The variables for this research include rates of PTSD symptoms, levels of stress-related hormones, sleep quality and body chemistry issues reflected in saliva tests.

The team also uses the gold-standard measures for conditions like depression and anxiety, and works with outside experts who conduct telehealth PTSD measures.

"The veterans learn how to do all the assessments and how to call a clinician and use their sleep wristbands. They learn how to collect, freeze and send back saliva for testing," O'Haire says. "We build relationships with the veterans and help them share their stories."

To enhance service-dog screening, the university's Arizona Canine Cognition Center focuses on identifying the ideal traits that will help a veteran achieve their goals. "Not every dog is made for — or wants — the same job," O'Haire says. "This is a really specialized role that requires dogs that are suited for it."

So far, the evidence is clear: A partnership with a service dog significantly predicts improvements in the everyday well-being of veterans. Particularly striking is the finding that a partnership with a service dog can help improve a veteran's level of an essential hormone called cortisol, which plays vital roles at just the right levels — too much or too little can be harmful. PTSD can alter a veteran's cortisol levels and present serious health risks, but the U of A research shows that a veteran with a service dog will return to the cortisol levels of a healthy adult.

"The goal of a service dog is to be a complementary intervention, not something that stands alone," O'Haire says. "Instead, these partnerships can enhance existing evidence-based care, medication or perhaps psychiatric treatment. And it works."

For now, the need is urgent.

"Veterans deserve every resource that could help them," O'Haire says. ◆

Center for Creative Photography Chief Curator Becky Senf

'REFUGE AND CURIOSITY'

By Mike Powell | Chris Richards photos

They say a picture's worth a thousand words, but what, in our image-saturated world, is the value of a picture? We talked to Center for Creative Photography Chief Curator Becky Senf about the center's Alice Chaiten Baker Interdisciplinary Gallery, plans for the CCP's 50th anniversary and what it means to make a familiar collection feel new.

When the University of Arizona's Center for Creative Photography opened in June 1975, photography was a relatively new art form; now it's the one people engage with most, whether they think of it as an art form or not. "Not only do we all do it," says Becky Senf, "but it has increasingly become a language we use in a standalone way." The uncaptioned Instagram post, the texted snapshot that instantly conveys a friend's afternoon: Most people can read an image now, and are in some ways more fluent in them than in the written word.

You might think someone in Senf's position — chief curator at a gallery and research center for photography — would see it as a moment of crisis, or at least of existential concern. But she seems optimistic. Excited, even. "It's like [photography] is being multiplied as we watch."

Last September, the center opened a remarkable retrospective of Tucson-based Chicano photographer Louis Carlos Bernal, whose work captured the domestic worlds of Mexican American communities in the Southwest in ways rarely seen in so-called art photography while also anticipating the way we present ourselves through social media now: casual yet carefully composed, outward facing (check out my stuff!) but cryptic and elusive, too.

In 2021, the center opened the Alice Chaiten Baker Interdisciplinary Gallery and this past year received a $1 million anonymous gift to support programming there. The intent is to create both an

Gallerygoers at the CCP's Alice Chaiten Baker Interdisciplinary Gallery

independently functioning space and a conversational counterpoint to the main gallery across the hall. Opposite the Bernal exhibition, for example, is a show called "Chicana Photographers LA!," whose imagery — Sandra de la Loza's urban archaeology, Amina Cruz's portraits of queer and trans people of color — feels different from Bernal's yet shares the effect of showing how Chicano identity can be expressed through art.

The gallery also has forged collaborations with the university's Art & Visual Culture Education program for an exhibition about the impact of color on photography ("Why Color?") and the U of A Laboratory of Tree-Ring Research for a show called "trees stir in their leaves." The latter in particular showed the way a single subject — trees — could be presented in radically different ways depending on the agenda of the person behind the camera: an interdisciplinary approach. "There was a really beautiful soup of photographs and trees and science and art that played out in the blending," Senf says.

One of the advantages of the Baker Gallery is that it gives curators like Senf a fresh opportunity to play with what a gallery experience can be. During last year's Linda McCartney retrospective, for example, the gallery ran "Eight Track," in which eight local musicians wrote and performed new work inspired by a series of Arizona landscapes projected on the gallery walls. "It was a totally different way of interfacing with the collection," Senf says. "That kind of freedom and invitation to think creatively, openly, innovatively is very exciting."

'One of [the] challenges and the rich benefits of collaborative work is that it works best when it happens organically. That takes a lot of planting seeds, having conversations. It takes time. Things have to develop.'

The coming year is still taking shape, but Senf's got ideas. A history of record-album photography, for example. A show about animals that might involve the School of Animal and Comparative Biomedical Sciences. A look at the intersection between photographic practice and music composition. "One of [the] challenges and the rich benefits of collaborative work is that it works best when it happens organically," Senf says. "That takes a lot of planting seeds, having conversations. It takes time. Things have to develop" — a photographic metaphor, naturally.

Senf acknowledges that the physical medium of photography — a black-and-white print on a wall — is going to be a hurdle for 18- and 19-year-olds conditioned to seeing images on screens, but therein lies the joy and challenge of her work: "that ongoing process of expanding an audience and making connections," Senf calls it. In the meantime, the CCP remains one of the best places on campus to spend a free hour. "We want the center's galleries to be a place of inspiration and dialog and refuge and curiosity," Senf says. Click. ◆

WITH THE BAND

Congratulations to the Pride of Arizona marching band on its Sudler Trophy win.

By Mike Powell

Perched on a side table among the papers, gadgets and memorabilia in the overstuffed office of associate band director Chad Shoopman '96 '99 was a bronze statue of a drum major rising out of a football stadium: the Sudler Trophy. Awarded by the John Philip Sousa Foundation to collegiate marching bands of uncommon excellence and contribution to the art, the trophy was officially presented to the University of Arizona's Pride of Arizona band during halftime of the Arizona-Houston game, after which was placed in the Jim Click Hall of Champions on the north side of the McKale Center.

But back in early November, it was still in the side table in Shoopman's office. "They won't let us post pictures of it until it's officially presented," Shoopman says. "But I mean, it's got 'The University of Arizona, 2024,' right there on the front," he says.

There's something a little mystical about the band. How they set their instruments down in a long, neat line on the field during rehearsal breaks. How their stadium section is always immaculate after games. ("We pick up all the trash," Shoopman says. "Right where we are. Every space we occupy.") How they are somehow both 250-plus people — horn players, color guard, twirlers — and one at the same time: this red-white-and-blue colossus shimmying and undulating down the field, all power and precision, but a little funky, too. We come for the game. But the band opens the portal to that primitive feeling that puts us over the top.

You will not see this at a football stadium in Lima or on a cricket field in Ahmedabad. Among the criteria for Sudler Trophy winners is having made "outstanding contributions to the American way of life" — a grandiose phrase, no doubt, but one that reflects the endemic quality of the marching band in general. When you hear one — the blare of the horns, the rattle and thunder of the drumline — you won't mistake yourself for being anywhere else in the world.

Part of Shoopman's challenge as a director is balancing the comforts of tradition with the nudge of something more creative or progressive. He has a background in both jazz and the direction of Disney bands, in the rigorous art of music and the light entertainment of it. Playing a track by DMX — an artist who helped define the massive attack of late-'90s radio rap — and Rossini's "William Tell Overture" back to back isn't just eclecticism, it's a reminder that these two seemingly irreconcilable types of music actually serve the same social purpose: to light the audience up with power.

"We try to make the offerings that we play diverse for our students," Shoopman says. "Good presentations of what I hope is quality material that also

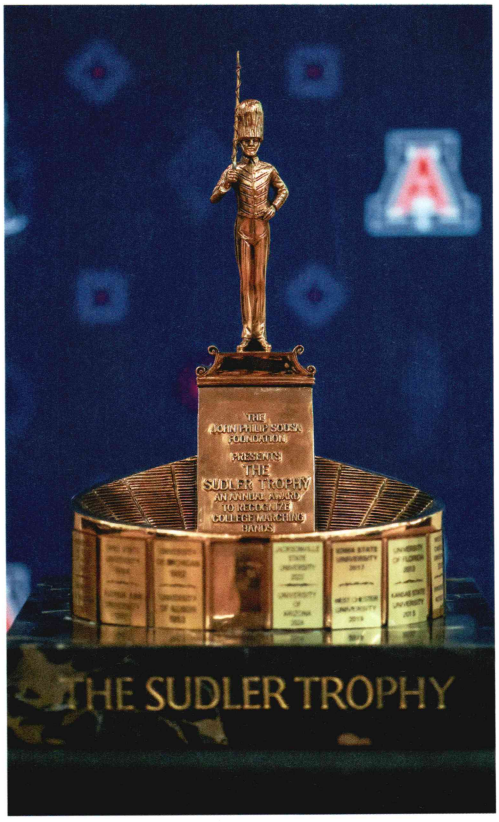
serves the general public in terms of elevating their gameday experience."

Currently, the band represents more than a hundred majors across every college. "You have an engineer talking to an architect, which might be related," Shoopman says. "But not to the veterinary science person or the arts person. They all figure out how to learn and lead people that don't see the world like they do." When they won the Sudler, Shoopman says, the band collectively sent notes to every dean on campus, "thanking them for their students' contribution not only to what they're studying to be in the real world, but that community Wildcat spirit, the life on campus, the way people associate the university with that feeling."

It bears mentioning that this is all a huge amount of work, starting with a week of band camp before the fall semester starts, where students spend hours in the paralyzing heat memorizing music, working out routines, learning their coordinates on a field, twirling, blowing, and generally applying themselves with an intensity they probably haven't applied themselves with before. For a lot of band members, that week is their first experience at college.

At a recent Band Day performance — an annual event hosted at Arizona Stadium to showcase exceptional high-school bands from across the state — the Pride played a program of Michael Jackson music. It was great: familiar but novel, powerful but nuanced. Have you ever seen a drumline play a perfect fill step by step, each player passing the beat to the person next to them like a current lighting up a string of lights? It's exhilarating. Almost impossible seeming. That was "Smooth Criminal." At the end of the program, fireworks. Some students were there from dawn until midnight.

Yeah, Shoopman says: The day show was great. But the night show. You had to have been at the night show. "It just had something to it that was like, 'wow, this is really happening,'" he says. "It was like magic." ◆



The Pride of Arizona at Band Day, November 2024. Photo: Kiara Garrett

The Case for Spontaneity

A conversation with Jessica Andrews-Hanna | By Riley Beck

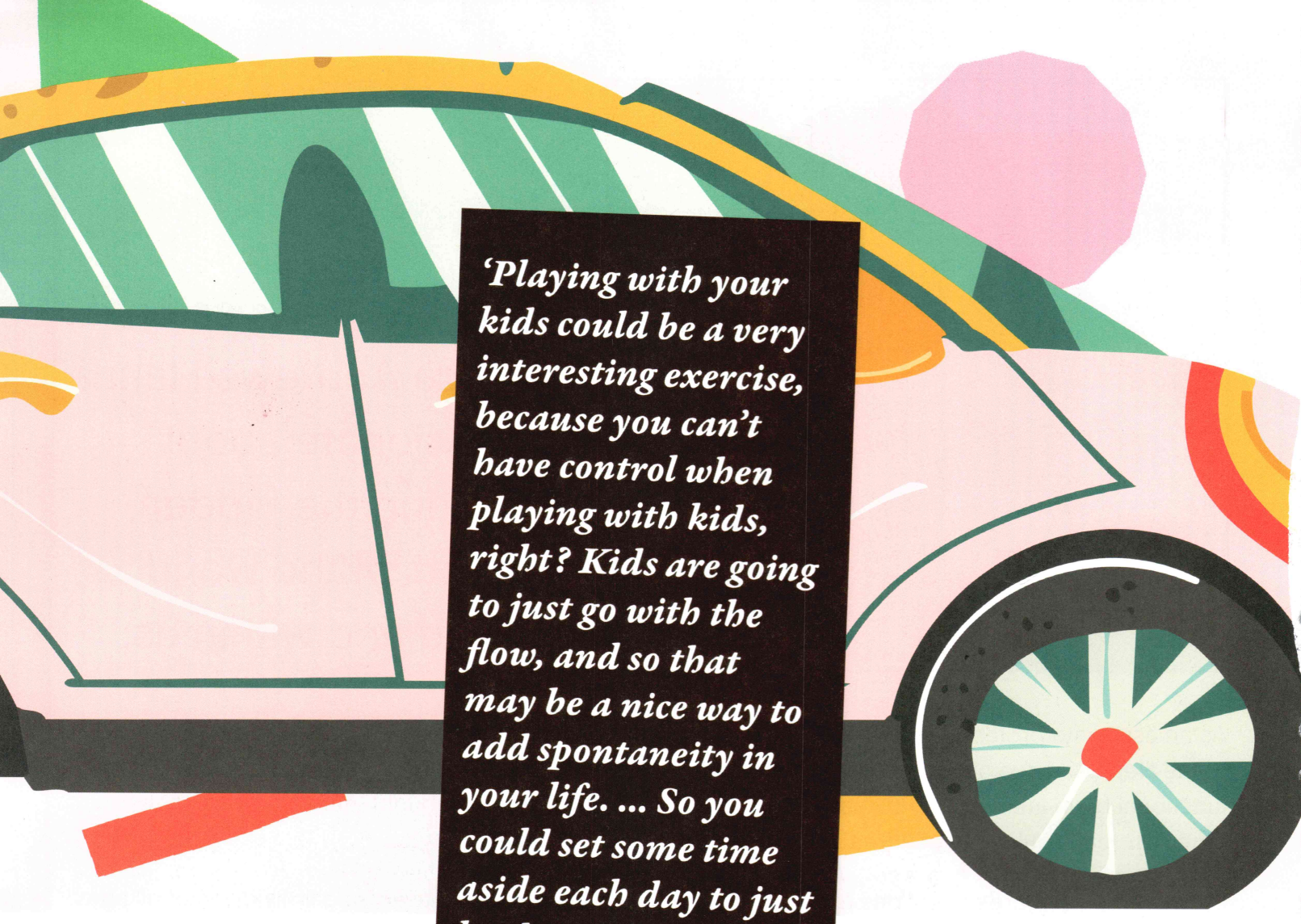
Cognitive neuroscientist Jessica Andrews-Hanna is passionate about exploring the hidden aspects of the world around and within us.

As an associate professor in the department of psychology at the University of Arizona and director of the Neuroscience of Emotion and Thought (NET) Lab, she combines behavioral experiments with functional brain imaging (fMRI) and network analysis to bring human thought, emotion, memory and other internally guided processes into view.

Her research explores questions relevant to various mental health disorders and individuals of all ages. The goal of this work is to develop interventions that help people reap the benefits of internally guided cognition, which includes reflecting on the past, considering the future and problem-solving. Andrews-Hanna was recently featured in a Time magazine article about how to be more spontaneous and why making time for spontaneity may be beneficial. In some of her studies, Andrews-Hanna has found that a high percentage of college students asked to sit alone with their thoughts find the experience unpleasant. In a world where turning to the distraction of a smartphone is so commonplace, Andrews-Hanna suggests we brave our boredom for the fruits of taking true breaks and letting our minds wander. She sat down with us to discuss spontaneity as well as some of her research that measures everyday thinking in different contexts.

Q: Could you describe the NET lab for non-scientists?
A: In the NET lab, we study the nature of human thought and emotion — the core processes that make us unique as individuals but are surprisingly hard to measure because they lie within our heads. We actually don't know that much about the nature of everyday thought, so a big focus of our research is developing techniques to measure thoughts and emotions as they occur in people's everyday lives. We also use brain imaging to map functional brain networks that support our thoughts and emotions, hence the acronym of our lab.

Q: What exactly is spontaneity, and could you also describe some of the most common states and thought patterns that are not spontaneous, for context?
A: The operational definition of spontaneity that we've been using in our lab is: experiencing thoughts and behaviors that seemingly come out of nowhere and are very flexible in their trajectory. An example would be when someone is mind-wandering, and they might happen on a thought, and that thought then may lead into another seemingly unrelated thought, that will then lead into another thought. We would call this style of thinking spontaneous, or unconstrained. These kinds of thoughts are different than the very intrusive thoughts that are quite common for some people. Intrusive thoughts are more habitual, and they're inflexible, so they're not likely to flow freely. When they appear in your mind, they're going to stick there, and they're



> *'Playing with your kids could be a very interesting exercise, because you can't have control when playing with kids, right? Kids are going to just go with the flow, and so that may be a nice way to add spontaneity in your life. ... So you could set some time aside each day to just be there with your kids or your pets or even with friends and family in social contexts.'*

going to be very hard to let go. For example, when we ruminate about the past, have anxious thoughts about the future or experience cravings, our thoughts are out of our control, but they're not spontaneous in the sense of being unconstrained.

Q: Why is spontaneity important? What are the benefits of being spontaneous?
A: We really don't know the definitive answer to those questions because it really has not been studied that much. That's part of why our lab is dedicated to these topics. There are elements from other domains in psychology that could provide some insight. For example, it turns out that spontaneity seems to be highly important for creative thought. During the "generation" phase of creativity, it's very important for your thoughts to flow with ease and very flexibly. So we think that spontaneous thought is highly important for creativity.

It may also be highly important for memory consolidation. We know that one of the time periods in which people often have spontaneous thoughts is during short breaks in between tasks, which are very important times for our brain to subconsciously learn the material that we were previously exposed to. If we don't have those breaks, or if those breaks are instead consumed by engaging in very constrained thought or distraction, this may have devastating effects on our memory and learning.

Q: Could you discuss the links you've found between freely moving, spontaneous thoughts and life satisfaction, or how cultivating spontaneous thought impacts aging?
A: There's been a little bit of other work linking spontaneous thoughts to happiness. Thoughts that that are characterized as more free-flowing tend to be associated with being in a positive, happy state and having overall better well-being. There's one important theory about this called "broaden and build theory." It's this idea that when you're in a positive mood, you can think very broadly, and your thoughts can flow with ease, which aids things like being creative. But when you're in a bad mood, your thoughts become more narrow, and that may have some detrimental consequences for the other things that I just mentioned while further promoting negative mood states. If you're in a negative mood and then you're ruminating on something, then that's going to cause you to be in a more negative mood and may lead to a

downward spiral of negative thinking.

I'm hesitant to say too much about the link to aging and spontaneous thoughts. We do know, however, that if you ask older adults about the kinds of things they tend to think about in everyday life, the content of their thoughts looks very similar to a younger adult who scores very highly on a test of trait mindfulness, [the ability to focus nonjudgmentally on the present moment]. And so older adults are actually saying that their thoughts are more positive and more about other people. Their thoughts tend to be more present-oriented, and they have more control over their thoughts. As to how that then really maps onto the spontaneous and the dynamics of the thought, we don't know yet. This is one thing that we're trying to measure in our lab. So the link between aging and well-being is a fascinating one. There does appear to be a paradox in the literature, where, despite the heightened risk for loneliness and health problems as well as the challenges aging tends to bring, there also often comes a sense of satisfaction with life and a focus on goals that bring meaning and happiness.

Q: Are there ways we can make our predictable daily tasks more spontaneous? Can cleaning a room or doing the same workout every day be made more spontaneous?
A: I do think that it may be beneficial for everyone to bring a sense of spontaneity to their actions. There are all these moments throughout the day that I feel like our brains were built to expect spontaneity. Many of them are natural breaks in more structured activities our brains engage in. Moments like waiting for transportation to pick us up or taking a shower. But, especially because of the importance of technology now in our lives, I have a lot of concerns that we're not actually taking advantage of our breaks in the way that we should in order to promote a healthy brain and mind. And so the degree to which we can make tasks fun and silly — all of those things are great. Even just adopting this perspective of, "let me just give myself time to relax and not have to be on the go all the time." Those breaks are sacred. We don't want to interfere with them by instead occupying our minds with something else that then defeats the purpose of taking breaks. For instance, I think if we're doing mindless chores at home, rather than turning on a show to watch while we're doing them, maybe this would be a nice time to just let our minds wander.

Q: It sounds like part of what you're saying is that in order to make space for the experience of spontaneity, we may sometimes confront boredom.
A: Yes, and this is hard, especially if our first instinct is to just turn to our phone to entertain us. And I think this is a particular problem in kids. Digital devices are basically designed to encourage kids not to use their imagination. And what we're finding in a lot of our studies is that when we ask college students to just sit alone with their thoughts for 10 minutes, this appears to be an unpleasant experience for many of them. Many younger folks tend to not like just being alone with their thoughts. However, in some of our research, we're actually showing that for people who score higher on measures of creativity, that's not the case. They actually savor and protect this time, and they'll take 10 minutes to think in a very flexible and spontaneous way that may relate to why they tend to be highly creative.

Q: What are some suggestions for spontaneity for people who strongly benefit from routine or predictability?
A: If they happen to have kids, playing with your kids could be a very interesting exercise, because you can't have control when playing with kids, right? Kids are going to just go with the flow, and so that may be a nice way to add spontaneity in your life. It's true for pets, too. So you could set some time aside each day to just be there with your kids or your pets or even with friends and family in social contexts. And then, also, [as I] was mentioning before, add little breaks. If you want to even schedule breaks, that's great, but make sure that that time to take a break is truly a break.

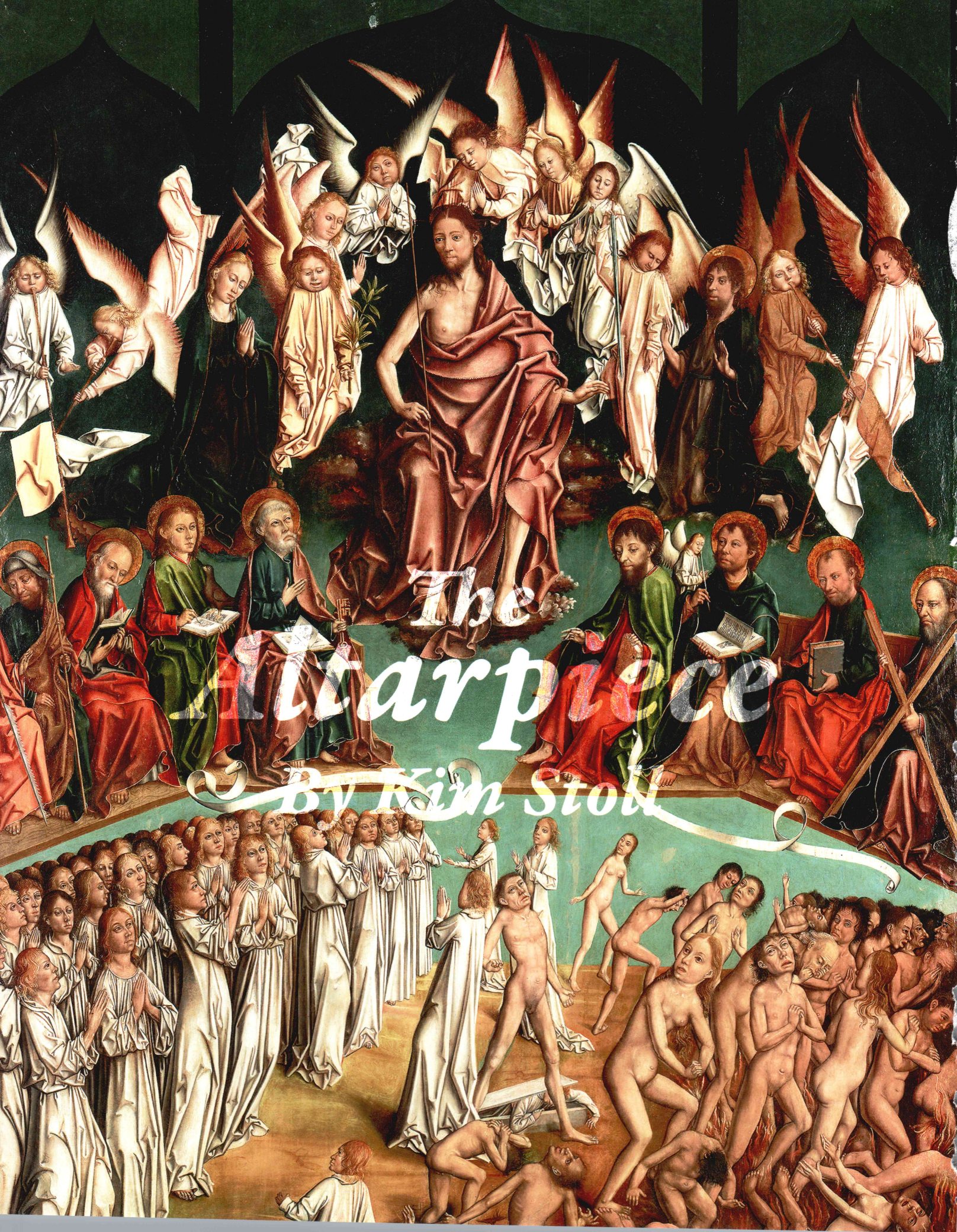
If you can walk or move, that's even better. There appears to be a connection between the physical act of moving and the cognitive act of moving in your mind. There are some theories about this. It may relate to the neurotransmitter dopamine. Really it hasn't been measured that much, but a lot of times, people feel like they need to move to think. I would also say, pick up a new hobby. And if you have a writing task, try to take more advantage of that brainstorming period where you just let the thoughts flow without editing them. Just get it all on paper, and then you can have your editing time later. Journaling is also a really good approach to just getting your thoughts out on paper. Even your worries and anxieties. Just let them out there and let them move.

Q: What else are you researching that you are excited about?
A: We're doing a lot of research into people's everyday lives. One thing that is exciting is we've developed this free, cross-platform app called Mind Window, and as of now we've got about 5,000 people from all over the world who use it pretty consistently. So we're able to explore the kinds of things that people think about in day-to-day life, how those thoughts change or vary in different periods of the lifespan, and how they might relate to things like mental health, personality and demographic characteristics.

Some of this research is relevant to what's sometimes called the preclinical stages of dementia, specifically Alzheimer's disease. So what we're finding is that [as] we measure a lot of cognitive processes in the real world, we're not really replicating what has been found in the lab. And for a long time we took that to mean, "Oh, well, there's something wrong with how we're assessing." But the way we are making assessments may actually be more accurate. That research has led to this whole branch of work that's essentially challenging the entire field of aging and memory research, which we are excited about.

We have another line of work on thoughts and emotions, but in relationship contexts. We actually recruit romantic couples to the lab, and we measure lots of things — both what they're thinking and feeling, and the nature of couples' everyday conversations. We also scan both partners [with] MRI and see how their brains are connected, so to speak. ◆

To learn more about her work in the NET Lab or to enroll in a study by Andrews-Hanna, search "Tucson NET lab."


The
Altarpiece
By Kim Stoll

The Altarpiece from Ciudad Rodrigo has weathered the passing of more than 530 years of war, natural disasters and journeys across the sea. This year, the 26 paintings that compose the altarpiece, or retablo, will begin a new journey: a major restoration estimated to take a decade to complete.

This monumental work of 15th-century Roman Catholic art from Ciudad Rodrigo, in the Salamanca province of Spain, has been on display at the University of Arizona Museum of Art since it was donated by the Samuel H. Kress Foundation in the 1960s.

"Normally, altarpieces as large as this would have been split up and separated and sold to individuals," says UAMA Director Olivia Miller '05. "You have pieces of altarpieces scattered all across the world sometimes. But all 26 works [from this altarpiece] that did survive are all here in this museum."

Miller says that to understand the present-day condition of the panels, one must first understand their history. Most were painted between 1480 and 1488, with at least three painted after 1493, by master artists Fernando Gallego and Maestro Bartolomé and their workshops. The works hung in the apse of the Cathedral of Santa María — rising as much as three stories above the altar — for decades. When the apse was remodeled, they were taken down and stored in the cloisters, never to be rehung in the church.

"By this time, it's the 17th century. So there's no air-conditioning, there's no humidity controls," says Miller. "So, they are in a room in the cloisters, subject to all kinds of weather and temperature fluctuations and humidity."

Then, in the 18th century, the region experienced two large earthquakes. "We know that the cathedral sustained damage," says Miller. "So we can assume that vibrations, if they were strong enough to disturb the cathedral, would have been strong enough to disrupt these paintings."

However, most of the paintings survived those natural disasters, as well as the Napoleonic Wars at the beginning of the 19th century. The cathedral was used as a lookout tower in a battle between Napoleon and the Duke of Wellington, and the church was heavily bombed.

Most — but not all. Miller says that while we have 26 panels today, we know there would have originally been more because key scenes, such as Christ's nativity, are missing. It is estimated that at least five panels are missing from the collection, some of which were likely destroyed during the Napoleonic Wars.

"They've been through a lot; they sustained a lot of damage," says Miller. The planned conservation aims to restore them as much as possible, while also undoing some previous conservation treatments.

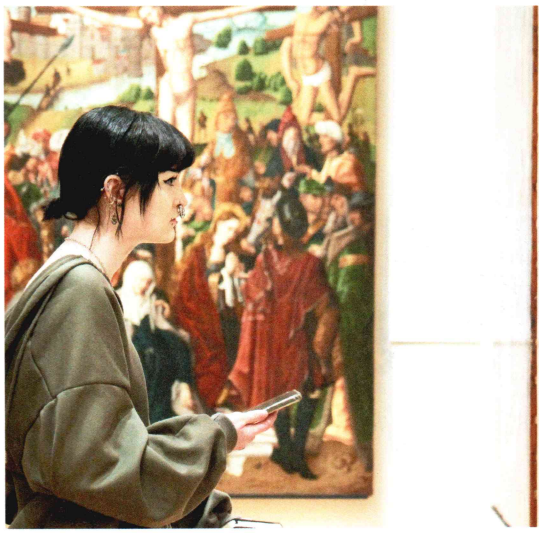
Miller says this is common as the field of conservation continues to advance. "As more technology becomes available to work with, we tend to discover that there were previous treatments that no longer hold up the way we thought they would," Miller says.

For instance, one major part of the conservation project will be removing the paintings from their cradles — lattice-like structures attached to their backs once thought to help keep the work stable and on plane. Over the decades, this method has been found to do more damage than good.

The paintings will be shipped off in pairs for conservation treatment by experts at New York University as well as by private conservators, a process which will likely take 10 years to complete.

"It's really rare for an altarpiece of this caliber and of this size to survive in the condition and completeness that it does, and so it's certainly worth all of the effort to make sure that we carry them into the future," Miller says.

"These paintings have been through so much in their history. We see this as the next chapter." ◆

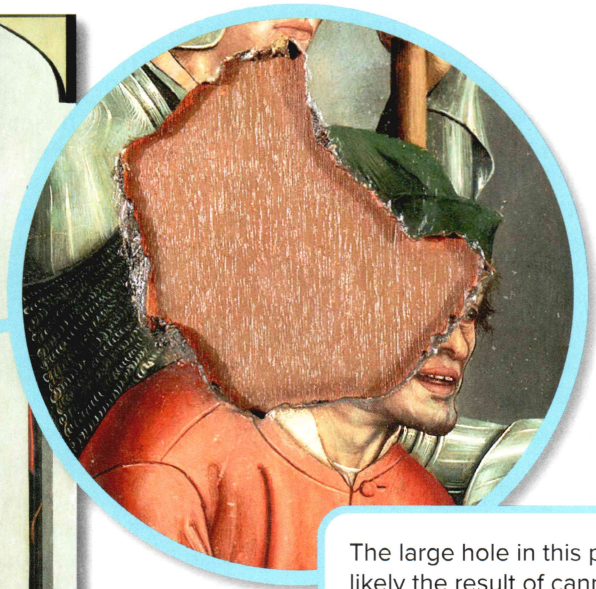


Above: Schoolchildren explore the Altarpiece from Ciudad Rodrigo. Photos courtesy of UAMA

Left: Fernando Gallego, Francisco Gallego, and workshop, "The Last Judgment." 1480-88, oil on panel. Gift of Samuel H. Kress Foundation.

Inside the Conservation Process

Fernando Gallego, "Ecce Homo." 1480-88, oil on panel.
Gift of Samuel H. Kress Foundation.



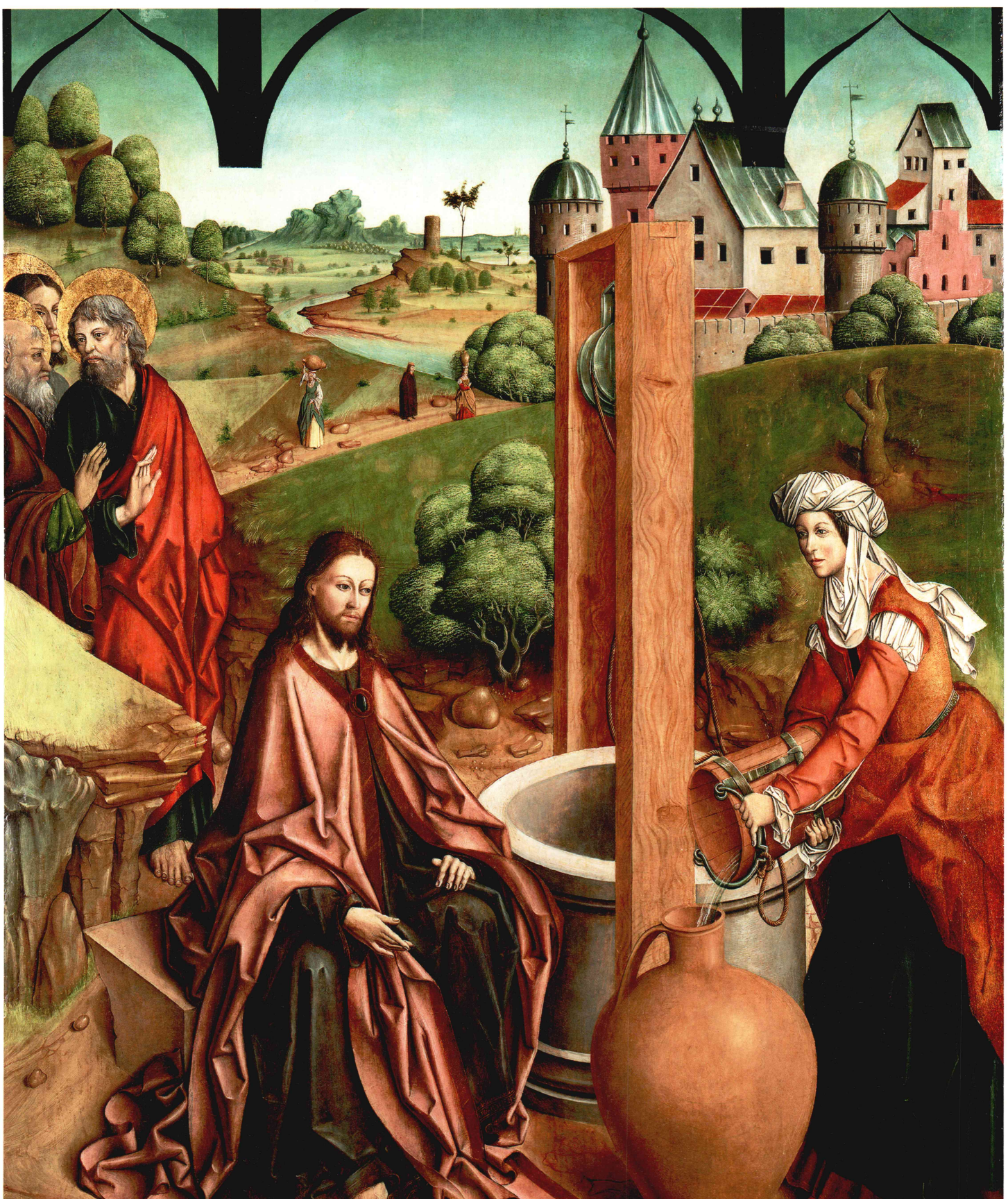
The large hole in this panel is likely the result of cannon shrapnel from the Peninsular War in the early 1800s, when the cathedral suffered heavy bombing. Earlier conservators decided not to repair the hole to preserve this element of the painting's history.

Renaissance artists didn't work in isolation: Master artists typically had large workshops so they could produce multiple paintings concurrently. In some of the altarpiece panels, color notations such as this "amarillo" (meaning "yellow") are beginning to show through the paint — a phenomenon called "pentimento," in which painted-over elements surface as the image ages. These notations offer insight into Gallego's process: It's likely that he sketched the figures and added color notations, then left his assistants to paint the figures. During conservation, none of the original paint will be painted over, and notations like this will remain visible.

Fernando and Workshop Gallego, "The Betrayal of Christ," 1480-88, Oil on panel. Gift of Samuel H. Kress Foundation.

Fernando Gallego, "Ecce Homo." 1480-88, oil on panel. Gift of Samuel H. Kress Foundation.

Fernando Gallego, "Christ and the Samaritan Woman." 1480-88, oil on panel. Gift of Samuel H. Kress Foundation.



Fernando Gallego, "Christ and the Samaritan Woman." 1480-88, oil on panel. Gift of Samuel H. Kress Foundation.

These frame-like black lines were part of a conservation effort that likely happened in the early 20th century to make the paintings look cohesive without their original frames, which were lost or destroyed in time. As part of the current conservation effort, each painting will be reframed in a custom frame; UAMA staff will also travel to the Metropolitan Museum of Art for training in how to create a Marvelseal envelope for each painting, which will create a microclimate inside its frame to help slow the natural degradation process.

For much of the altarpiece's history, only Fernando Gallego was credited with the work, though it was apparent that a second artist had been involved. In 2006, experts using infrared reflectography were able to see through the layers of paint to the underdrawing below, where artists had sketched outlines and made revisions. By looking at the subtle stylistic differences in the paintings and underdrawings, art historians attributed some of the work to Maestro Bartolomé. For example, in this panel, the face of Eve has round rosebud lips and thick, round eyelids — a contrast to the way Gallego typically rendered female faces, but resonant with the work of Maestro Bartolomé. Other differences include the way the drapery forms, the way hands are shaped and the depiction of Christ's halo. Together, these differences offer evidence for each painting's authorship. ◆

Maestro Bartolomé, "The Creation of Eve." 1486-1500, oil on panel. Gift of Samuel H. Kress Foundation.

What Comes After

A year ago, Eller lecturer Daniel Kinnear lost his brother to suicide. Now he's raising awareness about mental health issues on campus and funding programs he wishes he'd known about before.

By Mike Powell

In the weeks following his brother Jason's death, Daniel Kinnear told people what people in his position sometimes do: It was an accident.

It wasn't. Kinnear didn't have the language for that at the time, of course: to tell people his brother died by suicide. He was grieving. He was in shock. He was teaching five classes at the University of Arizona's Eller College of Management, with volunteer and advisory work on the side. "There's not really a playbook for what to do when that happens," he says. "Right?" Privately, he was shattered. Publicly, life went on.

His office mate, David Zynda, remembers the moment. He was at a faculty meeting. Their department head got up and announced that Kinnear had lost his brother in a car accident the night before. "I took it as a car accident," Zynda says. "But I'm always suspicious with these things, especially when you have someone so young. So I simply left a note."

In the note, Zynda told Kinnear he'd lost his own brother in 2020 — in his case, to suicide. He knew what that loss felt like. "The dagger in your heart," he says. Sitting in his office in Eller, he unzips a black pouch containing a Bible and some mementos and slides a photograph of a boy in a suit and bowtie across his desk: Jaxon Thomas Kramer Zynda. Not technically Zynda's brother, Zynda points out, but a nephew 10 years younger who Zynda helped raise from birth, who grew up alongside him, who shared Zynda's home. "One of the most special people in my childhood," he says. He was 16.

So Zynda left a note. "That was my low-key way of telling him," he says. "You know, if he did have that experience, that I did, too."

This was October 2023. Kinnear left for winter break and came back to the second half of a two-semester class. One student stood out. "He was great in the fall," Kinnear says. Top of the class. No. 1 contributor. But something had shifted. He'd lose momentum during presentations. Stumble over words. "He just kinda faded to the middle of the pack," Kinnear says.

Cautiously, Kinnear took him aside and asked: What's going on? The

student shared that his sister had attempted suicide over winter break.

Kinnear was at a loss: That made two people in his immediate orbit suffering in the same — or at least similar — way he was. Suicide had barely crossed his mind before. Now he was running into it everywhere. "He was the first student I told," Kinnear says.

Part of Kinnear's journey entailed dismantling his own prejudice about who might be susceptible to suicide in the first place. Drug addicts, outcasts, people with acute mental illness, he thought — at least not people like his brother. "He was completely sober," Kinnear says. "Physically fit. In the gym every day. Great job. Making a bunch of money. He had a girlfriend who really loved him, wanted to marry him."

A phrase that comes up in suicide prevention circles is that suicide doesn't discriminate. It certainly didn't for Kinnear. "I was ignorant," he says. "I had a stereotype. And it blinded me."

He noticed that one of his clients had given money to the suicide prevention program at the U of A's Counseling and Psych Services (CAPS), so he reached out. "They informed me that, in summer of 2024, the grant [funding the program] was ending," he said. Hotlines; peer support groups; training for faculty, staff and students in initiating the kinds of conversations Kinnear was beginning to realize might've saved the life of someone like his brother — "There was just going to be a website," he says. He decided to fund the program for the 2024-25 academic year himself.

"What we know is that one of the easiest ways to prevent suicide is to talk about it," says Aaron Barnes. Barnes is a clinical psychologist and director of CAPS and the person, alongside CAPS Associate Director Cassandra Hirdes, helping shape how we as a campus can best approach what can feel like an unapproachable subject.

Let's say you're 18. Away from home for the first time. Who's that stranger living on the other side of the room? Did someone put meals on the table for you at home? That's something to figure out. Don't forget to make friends. These are the best-slash-most-important years of your life. Yeah, COVID was hard on everyone. Did you pick a major yet? Is this what they mean by "dry heat"? Who actually *are* you?

The stress is real and seemingly limitless. Some call their parents. Others are starting to realize that their parents — and the culture and expectations those parents represent — are part of what's making them feel so alienated in the first place.

"A lot of our work is actually educating families," Barnes says. "Whether or not you 'believe' in mental health, I can talk about desired outcomes. 'Here: Your child is coming to us saying XYZ. They're at risk for suicide. What would you like to happen?'" CAPS won't reach out to parents until they have permission from students, but when they do, Barnes says the answer is always the same: "We want our child to be safe."

A PHRASE THAT COMES UP IN SUICIDE PREVENTION CIRCLES IS THAT SUICIDE DOESN'T DISCRIMINATE. IT CERTAINLY DIDN'T FOR KINNEAR. 'I WAS IGNORANT,' HE SAYS. 'I HAD A STEREOTYPE. AND IT BLINDED ME.'

On one level, Barnes and Hirdes are providing support. On another, they're trying to force a cultural shift. "I think oftentimes, societally, we think, 'mental health belongs over here,'" Hirdes says, framing an invisible box in the air to her right before framing a second one to her left. "And physical health belongs over here."

But take a subject like suicide and you see how those boxes are inextricably linked, or maybe even the same box. The second-highest cause of death among American college students: Is that a question of physical health, or mental?

The analytically minded might wonder how the efficacy of a suicide-prevention program can be measured in the first place: After all, you can't say you're succeeding just because people continue to live. Barnes points out that students who access CAPS services often cite it as the reason they stayed in school instead of dropping out. They're able to contextualize their issues, take them in stride. "It's not that no one's going to die from suicide," Barnes says. "It's that folks that seek help are going to get the help they ask for."

Of course, it's the students who don't ask for help that Barnes and Hirdes worry about most. "The folks that don't have any point of contact, connection, family supports," Barnes says. The CAPS building is located off the Highland Bowl on the south side of the campus mall: a shady, green, welcoming spot. Still, as Barnes points out, it's a health care facility, and the formality of the intake process — especially to students who might not have had a lot of exposure navigating health care growing up — can be intimidating, especially if you're having a conversation about mental health.

"A lot of our focus over the past few years has been increasing access points," Barnes says, including providing free counselors at cultural resource centers where students — especially LGBTQ students and students of color — might feel more comfortable. The peer-to-peer piece has been particularly effective on that front: the simple, profound effect of how being around people with similar backgrounds or experiences can open you up. "It's a very low-level intervention," Barnes says. "But the more students we have out there having those conversations, the less suicide we're going to see. At least, that's the working theory."

At the more acute end of CAPS' efforts is the co-responder program, which pairs mental health workers with University of Arizona Police Department officers to respond to crisis calls coming through both the emergency and non-emergency lines at UAPD. "It was in response to the safety requests of the campus," Cassandra Hirdes says. "To have more mental health support intertwined with crisis response so

'I THINK IF THERE WAS LESS OF A STIGMA, MAYBE MY BROTHER OR OTHERS WOULD BE MORE COMFORTABLE SAYING, "I'VE HAD THESE THOUGHTS. I NEED HELP."'

that it's not just coming from law enforcement."

Meet Patti Norris '89: bright, warm and endlessly energetic; licensed clinician and crisis network manager who oversees both the University of Arizona Crisis Mobile Team (UACMT) and the CAPS liaison to the Dean of Students Office. Norris has a golf cart named Lucy that she drives back and forth across campus, introducing herself, gathering knowledge and understanding of the university system, seeing gaps in communication and strategizing about how those gaps can be closed. "The listening tour," she calls it.

From Norris' perspective, the goal is getting students the help they need when they need it. "In the past, those students who experienced a mental health crisis would go from dean of students to a student assistance coordinator," she says. "They would make an appointment at CAPS, then CAPS would have to contact the student, and finally [the student] would see a clinician." This could take anywhere from four days to three weeks. People in crisis don't have three weeks; that's not what crisis means.

In listening, Norris hoped to streamline the bureaucracy that weighed the process down. Now, she says, she can often get to students the same day.

She has a trusting relationship with UAPD, she says — a necessity. But she's also aware of the harm police have caused certain communities, and why students might perceive the presence of law enforcement as a threat. Freddie Gray, George Floyd, Tyre Nichols — the stories keep coming. "We need to be thoughtful, because I don't want to cause more harm or fear," Norris says. "Because if I cause more harm or fear, I'm not going to be able to enter those spaces where there's a crisis."

Part of what Norris has done is outlined protocol whereby she can enter crisis situations with UAPD officers when there's a safety concern but go alone when there isn't. The effect is twofold. One, a student in crisis doesn't see a law enforcement officer and immediately think they're being punished — a dynamic that can loosen the stigma around mental health in general. Two, an officer working in tandem with a clinician like Norris helps shift the perception of law enforcement and repair trust with communities they may have historically harmed.

There's also the simple fact that this isn't the job UAPD showed up to do. "When you talk to Chief [Chris Olson], to our Mental Health Support Team officer John [Guetersloh], they don't want to be mental health providers," Norris says. "They don't want to respond to students who are suicidal. They're grateful."

These are not hypothetical situations. Norris has stories of students facing expulsion for violating the Student Code of Conduct when what they really needed — in her clinical opinion — was mental health support. Students who evened out and found their footing. Students who stayed. One point Norris makes over and over again is that a crisis is just a moment in time. It will not define you unless you let it. I'm Patti, she tells people. I'm here to help.

One challenge of addressing the risk of suicide on an institutional level is that it dovetails with other issues that fall under other jurisdictions. Jessie Semmann, who directs the campus Threat Assessment and Management Team (TAMT), points out that people who are thinking about suicide usually aren't thinking about harming others, for example, but people who are thinking about harming others — which would typically be the province of TAMT — are often willing to harm themselves, which wouldn't. (Additionally, Semmann says, "We know folks who are struggling with mental health issues are more likely to be the victims of violent crime than they are to be the perpetrators of [it].")

Say your roommate is having a hard semester but also starts posting images of firearms on social media. Say the fallout from a bad breakup turns into an obsession with an ex-partner. Semmann stresses that TAMT will take any call that comes to them, but that the overlap between issues adds complexity to situations that are plenty complex already. She also stresses that she feels a positive shift. "I can imagine if you attended the university 10, 20 years ago, we weren't having some of these conversations. We weren't as focused on some of these things — at least not openly."

"Sometimes I feel like we have so many avenues we're trying to come at this from," Cassandra Hirdes says — a natural response to a problem so deep and multifaceted. The operative goal at CAPS seems to be to proliferate: to turn students and peer leaders into the trained and trainers, to supplement law enforcement with the softer touch of counseling, and in general to spread the quilt of support as far and wide over campus as possible. "Something we've really been working on is sustainability," Aaron Barnes says. "Because if it's just me and the CAPS team, that's not realistic."

Part of Daniel Kinnear's gift is going toward funding something called QPR training: question, persuade, refer. Presenters at a recent training session described it as a mental health analog to CPR: not professional medical care, but an intervention that an ordinary person can make and still save a life.

Some of the training is intuitive, some is more subtle. Asking a question that can be dismissed with a one-word answer, for example ("You don't ever think about hurting yourself, do you?") can easily shut a conversation down. Or realizing that something as seemingly irrelevant to mental health as someone's boss taking a new job could be as major a loss as the dissolution of a relationship. Even something as seemingly obvious as empathy can be hard to practice, especially for those who rush to bright sides and silver linings: Sometimes, the training reminds you, a person just needs to be heard where they are.

Kinnear was blindsided by his brother's death but also has started to see some of their conversations in a new light. "He talked a lot about feeling trapped in his job," Kinnear says, "or about things being 'pointless'" — asides that might've just been a hard worker blowing off steam but also might've

been invitations to a conversation he didn't know how to have head-on. "After I learned about the trainings [CAPS] does, I could see that though the signs were very faint, there were signs."

Kinnear takes responsibility for his ignorance but also sees it as the byproduct of a broader societal failure. "I didn't struggle with anger at [Jason]," he says. "I didn't struggle with regret, because I didn't really know what to do. But I do kind of resent that no one really talked to me about this. It's not open in our culture. You know, we give trainings to high-school students about drinking and driving. But this is something that's not talked about at all."

This is part of what makes Kinnear's candor so radical and remarkable: He knows he was prejudiced about mental health and knows the passive damage that prejudice caused. The politics and generational divisions of the conversation don't help: the hopeless sensitivities of "liberals," for example, or the intolerance and repression of "conservatives." Younger people pointing out how hard times are — how fraught, how violent, how economically dim — and older people countering that young people have no idea how easy they have it. All with the same net effect of pushing people into corners where their isolation takes over. "I think if there was less of a stigma, maybe my brother or others would be more comfortable saying, 'I've had these thoughts,'" Kinnear says. Saying, "'I need help.'"

There's always the question of what narrative value facts and figures have in a conversation like this. Are they vital or opportunistic? Do they help make the urgency of the issue more concrete or do they vaporize it into a set of numbers — or worse, reduce an issue of life and death to a soundbite?

Would charts demonstrating rising suicide rates in the United States across all lines of age, gender and ethnic background, for example, persuade those unconvinced that this is a major issue in American society? What about noting that, in 2023, about twice as many Americans died by suicide than by homicide, or that 10,000 more Americans died by suicide that year than in car accidents?

Would figures demonstrating disproportionate rates of suicide in Native Americans open a conversation about the effects of economic and cultural marginalization on mental health? Would noting, as is the case year after year, that men die by suicide at vastly higher rates than women force a conversation about what lessons we teach our sons about how to survive life itself?

One slide in the QPR training suggests that every suicide touches 135 people: family, friends, co-workers and so on. It's a little bit like throwing a rock into a pond, the trainers say. Kinnear is one person. His colleague, David Zynda, is another. Kinnear's student is a third. Each one is near the epicenter of their own tragedy, their own loss. But they're also points on each other's personal maps, a little further out from the center. In the end, the analogy goes, the ripples of suicide touch us all. Zynda remembers going to his church in search of help after his brother Jaxon's suicide at the beginning of COVID lockdowns in 2020 and realizing he was going to have to suffer alone. "It was locked," he says. "I couldn't even go inside. I just fell on the ground."

"It's a difficult issue for all of us," says the actor Greg Kinnear '86, who is Daniel's uncle. He's had his own brushes with suicide over the years — a makeup artist he knew early in his career, for example — but Jason's death is the first time it touched his family directly.

The subject is easier to broach than it used to be, he says. But the stigma is still there, and the resources are still thin. "You don't know how you're going to process something until it's right in front of you," he says. But he's watching Daniel; following his lead, even. "[He's] taking a foot forward in all this tragedy and saying, 'How do we make this better? How do we help others that might be in this situation; how do we find a more local way to lend a hand?'"

'WHAT WE KNOW IS THAT ONE OF THE EASIEST WAYS TO PREVENT SUICIDE IS TO TALK ABOUT IT.'

A word that comes up in QPR training is "hope." How essential it is. How long a little bit of it can go. Daniel Kinnear remembers a student coming in shortly after Jason's death and telling Kinnear how much she loved his class, "how much she respected and admired that I was continuing to teach it." Innocent praise, made in passing. But it stuck with him, maybe even shifted his trajectory. "When someone's in a crisis, a very small amount of encouragement can have a huge impact," he says.

He's still making his way. Teaching. Working. Keeping busy. Not a lot of time for hobbies. It's only been a year. David Zynda, the colleague who left Kinnear that note when Kinnear was still calling his brother's suicide an accident, is teaching, too. Daniel, Jason; David, Jaxon: the lives that go on go on altered. Kinnear is funding this year's program because his life was changed by suicide. He also sees how the resources and training at CAPS might've helped him had he found them in time. When this year's over, who knows. Early on, he says, he asked himself a question that set him on his path: "'What would you do if you weren't afraid?'" he says. "And my answer was, 'I'd tell other people about this.'"

If you or anyone you know is struggling with thoughts about suicide, please consider contacting a mental health professional or a helpline dedicated to suicide prevention. Resources such as the 988 Suicide and Crisis Lifeline and the Crisis Text Line (text HOME to 741741) offer confidential support 24/7. CAPS is also available to University of Arizona students as a walk-in resource during business hours or 24/7 by calling (520) 621-3334 and dialing '1' to speak with a counselor.

If you are experiencing a mental health emergency, call 911. You are not alone; there are people who care and want to help.

For more information on Campus Health's Prevent Suicide Initiative and more resources on suicide and suicidality, visit preventsuicide.arizona.edu.

For information about becoming a student supporter, visit caps.arizona.edu/student-supporter; for information about CAPS crisis support, visit caps.arizona.edu/crisis. ◆

Michael Abecassis
Photo: Kris Hanning

'Rowing in the Same Direction'

A talk with Dr. Michael Abecassis, dean of the College of Medicine – Tucson | By Mike Powell

Photo: Kris Hanning

Michael Abecassis recently finished his fifth year as dean of the College of Medicine – Tucson, a period that overlapped with both the COVID-19 pandemic and the aftershocks of the merger of Banner Health with the University of Arizona Medical Network. A challenging time in the school's history, to say the least.

"I think the place had been neglected," he says, reflecting on his start here. "There were seven interim chairs and three chairs waiting for a dean to show up to let them know they were retiring. That's 10 departments with no vision, no plan. Other departments were just floundering. I saw it as a huge opportunity to make a difference."

Born in Tangier, Morocco, Abecassis grew up in Toronto, where he trained as a transplant surgeon for the liver, pancreas and kidney. He went to the University of Iowa in 1991, then to Northwestern University's Feinberg School of Medicine to direct what was then its new liver transplant program.

He was happy in Chicago. Raised children. Loved his house. Had community. Then came breakfast in Scottsdale with Larry Goldberg, then-president of Banner – University Medicine. Goldberg suggested that Abecassis interview for the dean here. "Why would I want to do that?" Abecassis said. Then a meeting with U of A's then-president — and fellow transplant surgeon — Robert Robbins in the bar of the Drake Hotel in Chicago. "He says, 'Larry Goldberg said that you might be interested in coming to Tucson as a dean.' And I said, 'Well, that's not exactly how the conversation went.'"

That, of course, is what happened. (One important factor was Abecassis' wife, who asked, among other questions, "How much longer are you going to keep getting up in the middle of the night to do transplants?")

"My primary goal was to change the culture," he says. "It was easy to do because I had to recruit all these new chairs and center directors" — one recent example being Hesham Sadek at the Sarver Heart Center. "If you select the right leaders, they bring in a culture that becomes a culture of the place."

His pride in his work at COM – T is evident. "We went from a $200 million loss in this market to, last year, a million short of being profitable in a $1.9 billion budget," he says, by way of example. He also knows there's still plenty to accomplish. "The College of Medicine should be here," he says, holding his hand flat in the air. He moves his hand down, "It's here." Then he moves his hand high up. "And it could be here. And I thought we can do it, so here I am."

Q: Let's start with something basic. Where'd you grow up? Where do you come from? How'd you end up a liver transplant surgeon?

A: I grew up in Toronto, in Canada. Went to school there. Undergraduate, medical school, residency training — all my training was there. So, I did my residency, and then I did a fellowship in hepato-pancreato-biliary surgery. That's surgery of the liver and pancreas and biliary tree. And then I did a liver transplant fellowship, because liver transplants were just starting to take off. Toronto wanted to have a liver transplant program. When I was doing a postdoc in the lab, I would go down to Pittsburgh, because this was Pittsburgh's heyday with Tom Starzl, who was the father of liver transplants. I would go down to Pittsburgh to learn the procedures.

And then — again, when I was still doing my postdoc — we started the liver transplant program [in Toronto], so I became involved with that. Eventually, the chairman at the University of Toronto, Dr. Bernard Langer, called me into his office and offered me a job to stay at the University of Toronto as part of the liver transplant team.

You may or may not know this, but insulin was discovered at the University of Toronto, at the Banting and Best Institute. And Dr. Langer felt really embarrassed that this is where insulin was developed for diabetic patients, but Canada did not have a pancreas transplant program for diabetes. So, [he] pulled me into his office at the Banting and Best Institute. Told me that he wanted me to become a faculty member there, which was a great honor — if you were at the University of Toronto, that was, like, the biggest honor. And then he said, "But I'm embarrassed, because we don't have a pancreas transplant program, so why don't you go learn how to do those things and come back and be the first Canadian surgeon to do one?"

Those were his words. And then he said, "And by the way, why don't you learn how to do kidney transplants too?" Because in the British system, which was the Canadian system, kidney transplants were being done by urologists, not by the general surgeons. And he thought that I should do the first pancreas transplant in Canada and be the first abdominal transplant surgeon in Canada, which meant doing the liver, pancreas, kidney.

I ended up going to the University of Iowa to learn how to do pancreas and kidney transplants, but I had this grant to do research with a world-renowned transplant immunologist. So, you know, during the day, I operate on patients, and during the night I go to the lab and do research. And while I was there, there was a young college student that came in with acute liver failure. She was dying. At that time, I was sending all their livers to Omaha. There were very few liver transplant programs. So, I was going to do the pancreas and kidney transplant, and the liver was going to go to Omaha.

And this college student's parents had showed up, and they'd been talking to the nurses. When I came back to check on her, her dad came up to me, and he said, you know, "Is she going to make it?" And I said, "No." And he said, "Well, why not?" And I said, "Well, her pupils are already dilated, and people with acute liver failure die of brain swelling." And I said, "I think by the time she gets to one of these programs and they find a liver for her... I mean, this develops in hours."

So he said, "I hear you know how to do liver transplants." And I said, "Yeah, I do. How do you know that?" He said, "Well, the nurses have been talking. And I heard you have a liver, and I heard it's blood type O." And I said, "How do you know that?" And he says, "Well, the nurses have been talking." And I said, "OK." And he goes, "Why can't you do her liver transplant?" And I said, "Because we don't have a liver transplant program, and I'm a fellow learning how to do pancreas and kidney transplants." And so I went off to the operating room to do this kidney and pancreas transplant, and I get paged by [transplant surgeon] Dr. Corry, Robert Corry. He wanted me in his office. I figured, oh boy, I must have done something really bad.

So, I run down to his office. He had sent another surgeon to do the kidney and pancreas. I walked in, and there were some very high-level people from the University of Iowa there, and they said, "You're going to do a liver transplant today." And I said, "What are you talking about?" And they said, "Well, [the student's] dad has gone to" — I think it was, at the time, the CEO and the dean; he'd gotten very high — "and said something to the effect of 'My daughter's dying, we have a liver, we have a guy that knows how to do it. So, I'll make it very simple: If you don't do it, I'm going to sue you, and if you do it, I'll give you a lot of money.'"

'My primary goal was to change the culture. It was easy to do because I had to recruit all these new chairs and center directors. Those people, if you select them right, bring in a culture that becomes a culture of the place.'

So, I end up doing a liver transplant. The young woman did fine. Then Dr. Corry and the chair of medicine came to see me, and they said, "You're not going back to Toronto."

Q: You're a professor at the BIO5 Institute here, which draws from 19 colleges and 84 departments across the university. You've given interviews to Tech Launch Arizona about the importance of educating medical students about things like intellectual property. Tell us about the relationships COM – T is cultivating with other departments in the university to facilitate interdisciplinarity.

A: I'll cite, for example, that we are working on a new bachelor's of science in medical device technology and development, which is one of a kind. Jameshia [Granberry, executive director of administrative operations and chief of staff at the college,] is spearheading that. It'll be medicine, engineering, the business school, the law school and Tech Launch Arizona.

My goal is to have kids come out of high school that have an interest in subjects related to health and give them 12 to 15 months of a medical education so that they are fluent in the language of medicine: anatomy, physiology, the basics. Then they have to be fluent in the language of engineering as it relates to medical devices: what's CAD, for example. Then they have to learn the language of business as it relates to devices and in general.

A young Dr. Abecassis
Photo: provided by Abecassis

Photo: Kris Hanning

You know, how do you create a pro forma, a business plan? Read a P and L statement? What are the four Ps? You know, some marketing. Then they go to law school and learn all the regulatory requirements; you know: What's the FDA, what's an IND, what's an IDE? How do you mitigate against when a device goes bad and there's a big lawsuit? And then finally, with Tech Launch Arizona, how do you monetize discovery? How do you go from discovery to commercialization? What's a Series A, what's a Series B, what's a Series C?

Then we're going to send the students to the operating room see how medical devices are being implanted. Go to the large animal facility where they're testing these things. Go do a six-week co-op with a local biomedical, biotechnical, pharma company, you know? See how the real world works. So that's four years. We're proposing it to ABOR this summer and it'll go live fall of '25.

You know, a lot of people talk about interdisciplinary or multidisciplinary. I talk about transdisciplinary: It's got to cut across the disciplines. And the other part is that every discipline really needs the other, rather than one discipline trying to do it all. I have 29 academic units that report to me: 17 clinical departments, five basic science departments and seven centers. When I came in [to COM – T], there was immediate recognition that they're not aligned. Everybody's doing their own thing. It's like Brownian motion. There's no alignment. And so I thought, we need to align these units to be going in the same direction, be rowing in the same direction, have the same finish line in mind.

Q: Tucson has higher poverty rates than most Western cities its size. Overdose rates in Pima County were at an all-time high in 2023. How is COM – T preparing students to face these sorts of challenges, and what kind of outreach programs are you cultivating within the immediate local community?

A: A lot of this is based on fentanyl. It's based on people being addicted. Addiction is a disease, so coming up with nonaddictive ways to treat pain is very important. So we've developed [the University of Arizona Health Sciences Comprehensive Center for Pain and Addiction] to try to find ways around having to use narcotics and addictive drugs. That's a long-term approach.

And it's not just that there's a poor community [in Tucson]. I think, as important as that, there's an underrepresented, underserved community. So the medical school has a program called the Pre-Medical Admissions Pathway [P-MAP], which makes an effort to admit 10 medical students into our medical school class that come from underserved, underrepresented communities. We pick them up as undergraduates, we help them get into medical school, we help them get through medical school.

Now, we also have a program that was started four years ago where we

'A lot of people talk about interdisciplinary or multidisciplinary. I talk about transdisciplinary: It's got to cut across the disciplines. And the other part is that every discipline really needs the other, rather than one discipline trying to do it all.'

have state allocation for tuition, but for every year your tuition is paid by the scholarship, you have to go back and serve your community for a year in a primary care setting. And what we found is that in the first year we gave those scholarships, 30% of them went to P-MAP students, because [those students] wanted to go back and serve their communities. They're going to become physicians familiar [with these issues] because they learn in an environment where those issues are present. I think that's a big one, and we need to do more of that.

Now, when I got here, they told me, "We have this program. It's great." Then they said, "But the grant is ending, so we're going to end the program." I said, "Over my dead body. I'll go rob banks if I have to, but we're going to fund the program." And we did it. We're doing it.

At the end of the day, it's all about getting the necessary funds to be able to support those efforts. There's no easy answer. There's no one magic bullet that's going to get it done. It's persistence.

Q: Over the past couple of years, we've seen what are effectively total abortion bans in states like Idaho, Indiana and Kentucky. How do you think about administering medical education in the face of conflicts at the state legislative level?

A: Human beings are still here because we adapt. You have to react, and you have to adapt, and you have to do what's right in terms of educating our students and residents without breaking any laws. You know, we all live with the limitations of our environment, and none of us want to end up in jail.

This applies to diversity, equity and inclusion, too. The first thing I did [when I arrived] was appoint a vice dean for DEI — [Celia Valenzuela, who is also an associate professor in obstetrics and gynecology]. We're a Hispanic Serving Institution. We have the land grant. We have to be very active about looking at underserved and underrepresented communities, whether it's gender or anything else. But if you have those three letters, you basically have a target on you. You're at risk for having somebody say, "You cannot do those things. You get no funding to do that, and you can't do that." So we had a dean's suite meeting where we tried to explore how we could continue to do the things that we believe are important and not be at risk. I said, "You know, DEI is a hot-button issue. Why don't we think about what we want to do that doesn't include those three letters?"

So, we just officially changed to — actually, I got outvoted. I wanted it to be ABC, and it's now ACB, because

Photo: Kris Hanning

the vice dean didn't want to be a vice dean of ABCs. So, it's access, community and belonging. "Access" implies equal access. Access to health, access to education, access to whatever is relevant to the faculty and student community. It's, "We're all one community." And then "belonging": Everybody needs to feel like they belong to that community.

It's the same thing as the abortion issue: Let's just do what we need to do without taking on fights. You know, I'm not a political person. If I see politics, I cross the street, because there's no winning. I'm hoping that common sense prevails and that we just do what we all believe is right and that no one would argue is the right thing to do without raising flags.

Q: You have an interest in literature and classics, in particular Rimbaud.

A: My dad was a professor of Latin, Greek and French philosophy. He used to get all these journals on French philosophy, and I used to read them. So, when I went to college, I took a course in French philosophy. And the exam was basically a three-hour in-class essay, and you got a choice of a few topics and authors. And we knew there would be a potential to write the essay on Rimbaud and his works.

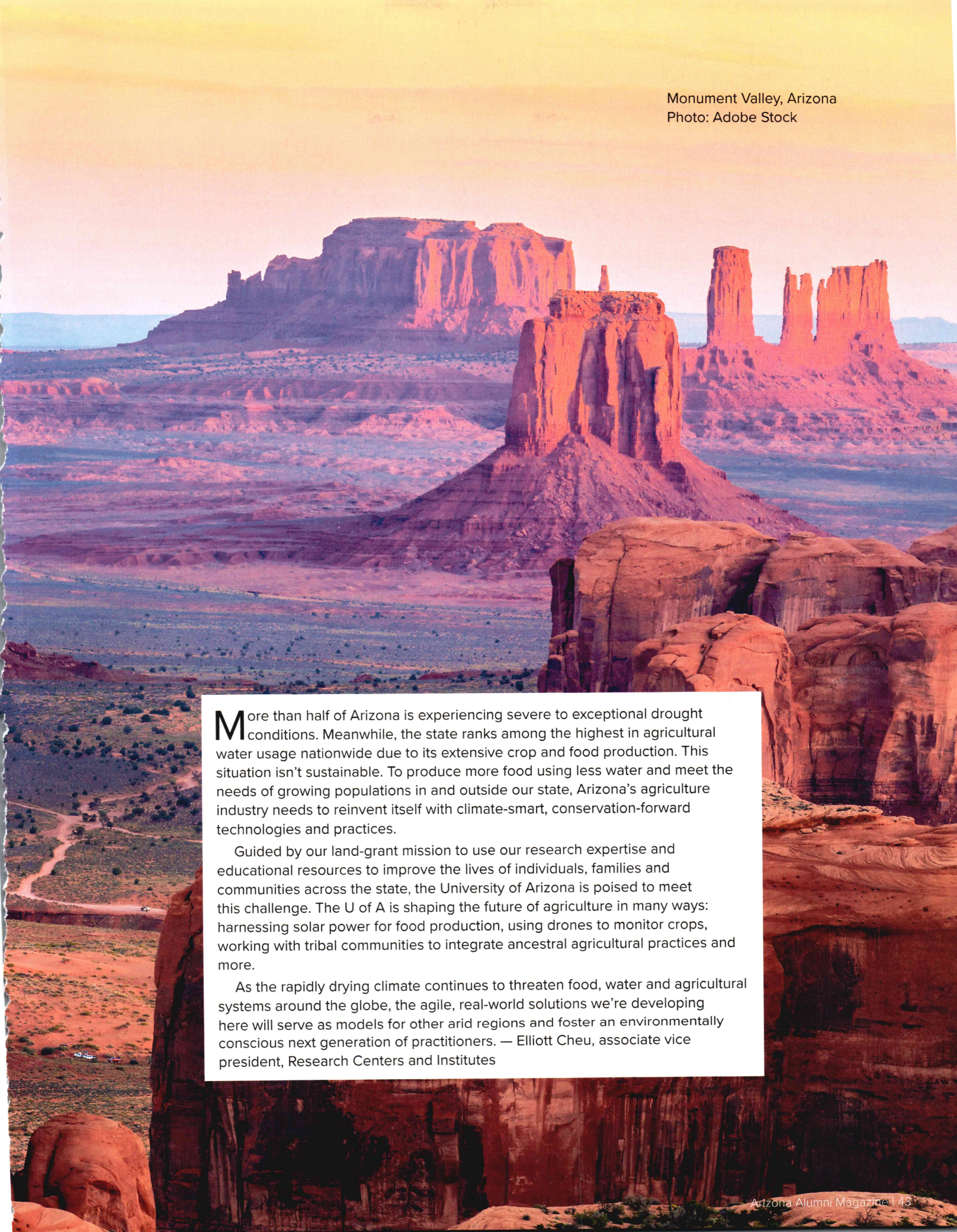
I happened to be going to a wedding that Sunday night with my parents, because it was a family friend. My exam was on Monday. So, I was sitting at the table with my dad, and I said, "You know, I'm taking this exam tomorrow, and I'm thinking of writing something on Rimbaud." And he said, "OK, well, let me tell you what I think about him," right? He starts literally giving me his impressions on Rimbaud. And it was at a wedding. So, I'm half listening, half not-listening.

And when the exam came, it turns out Rimbaud was one of [the topic choices], so I wrote this essay on Rimbaud. Part of it was mine, part of it was regurgitating what [my dad] had said. And I get this notice that I won the Squair French Prose Prize for the University of Toronto. A bunch of money. I got this prize literally from listening to my dad during a wedding. I thought that was cool, but I didn't think I would make a living doing that, so I figured I better do something professional.

But I've always been a big [fan of] the existentialists. I loved reading Jean-Paul Sartre and Albert Camus. When COVID hit, I decided I need to write a personal something every week to the faculty to let them know what was going on. I did this for about a year. And I always started with a quote relevant to what I would write, whether it was Sartre, Camus or even Voltaire. And some of the faculty really got into it. In fact, [Joseph] Alpert — cardiologist, been here forever — was starting to text me, because his favorite book was [Albert Camus'] "La Peste" — you know, "The Plague." He started, like, commenting on my comments. You know, COVID was like "La Peste." It started this whole thing. I probably got a half a dozen people here that were *really* into this thing. ◆

AGRICULTURE IN THE AGE OF A HOTTER, DRIER ARIZONA

By Eric Van Meter for the U of A Office of Research, Innovation and Impact



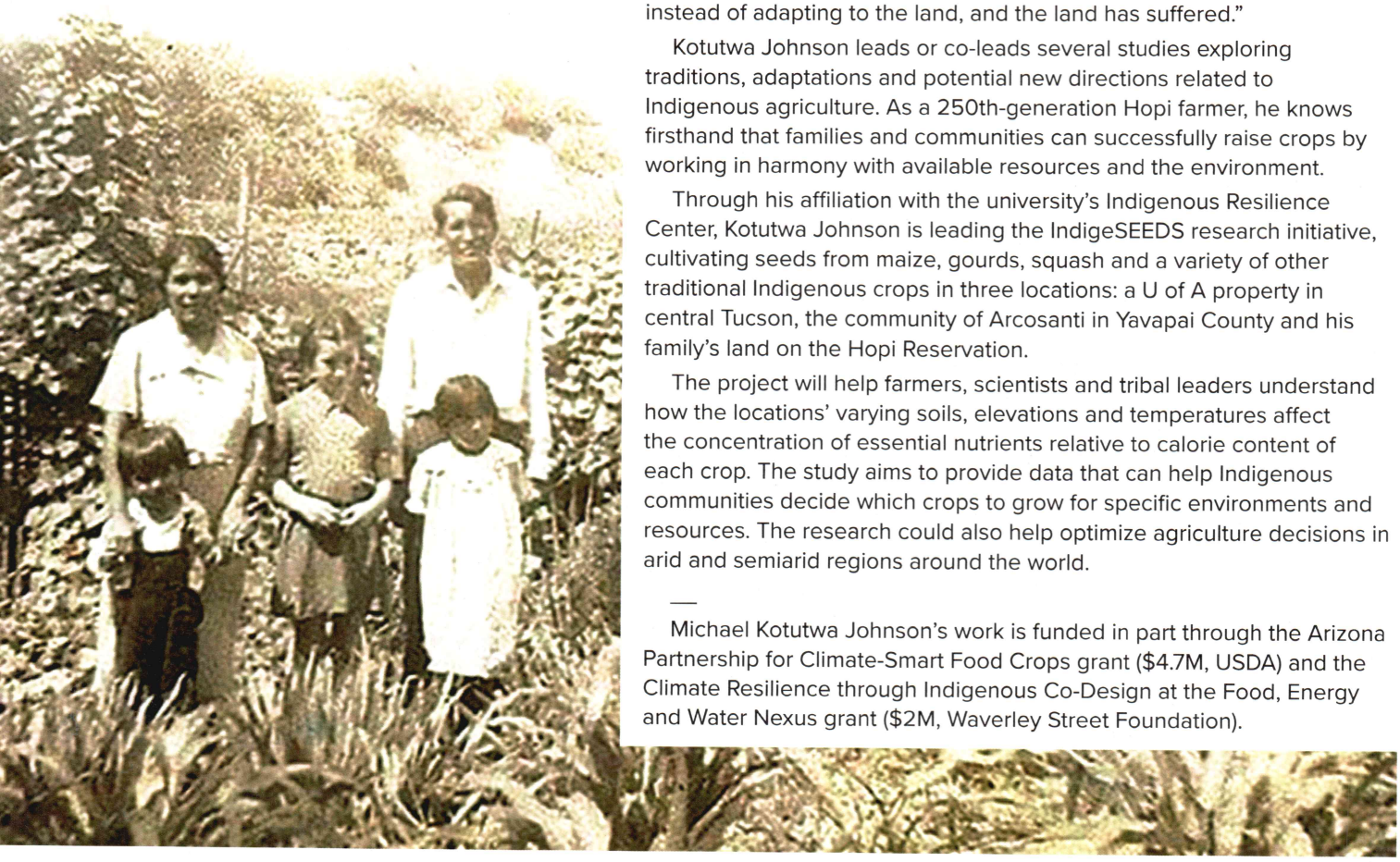
Monument Valley, Arizona
Photo: Adobe Stock

More than half of Arizona is experiencing severe to exceptional drought conditions. Meanwhile, the state ranks among the highest in agricultural water usage nationwide due to its extensive crop and food production. This situation isn't sustainable. To produce more food using less water and meet the needs of growing populations in and outside our state, Arizona's agriculture industry needs to reinvent itself with climate-smart, conservation-forward technologies and practices.

Guided by our land-grant mission to use our research expertise and educational resources to improve the lives of individuals, families and communities across the state, the University of Arizona is poised to meet this challenge. The U of A is shaping the future of agriculture in many ways: harnessing solar power for food production, using drones to monitor crops, working with tribal communities to integrate ancestral agricultural practices and more.

As the rapidly drying climate continues to threaten food, water and agricultural systems around the globe, the agile, real-world solutions we're developing here will serve as models for other arid regions and foster an environmentally conscious next generation of practitioners. — Elliott Cheu, associate vice president, Research Centers and Institutes

Michael Kotutwa Johnson's grandfather Fred Aptvi Johnson (R) and grandmother Minnie (L) with his father Caleb (L) and two aunts in Lower Moencopi on the Hopi Reservation. Photo: provided by Michael Kotutwa Johnson



INDIGENOUS AGRICULTURE

LEARNING FROM THE LAND

Modern agriculture can benefit from Indigenous wisdom when it comes to restoring and sustaining health and well-being for people as well as for the planet. So advocates Michael Kotutwa Johnson, assistant professor at the School of Natural Resources and the Environment, observing that in industrial farming, "We force the land to adapt to us instead of adapting to the land, and the land has suffered."

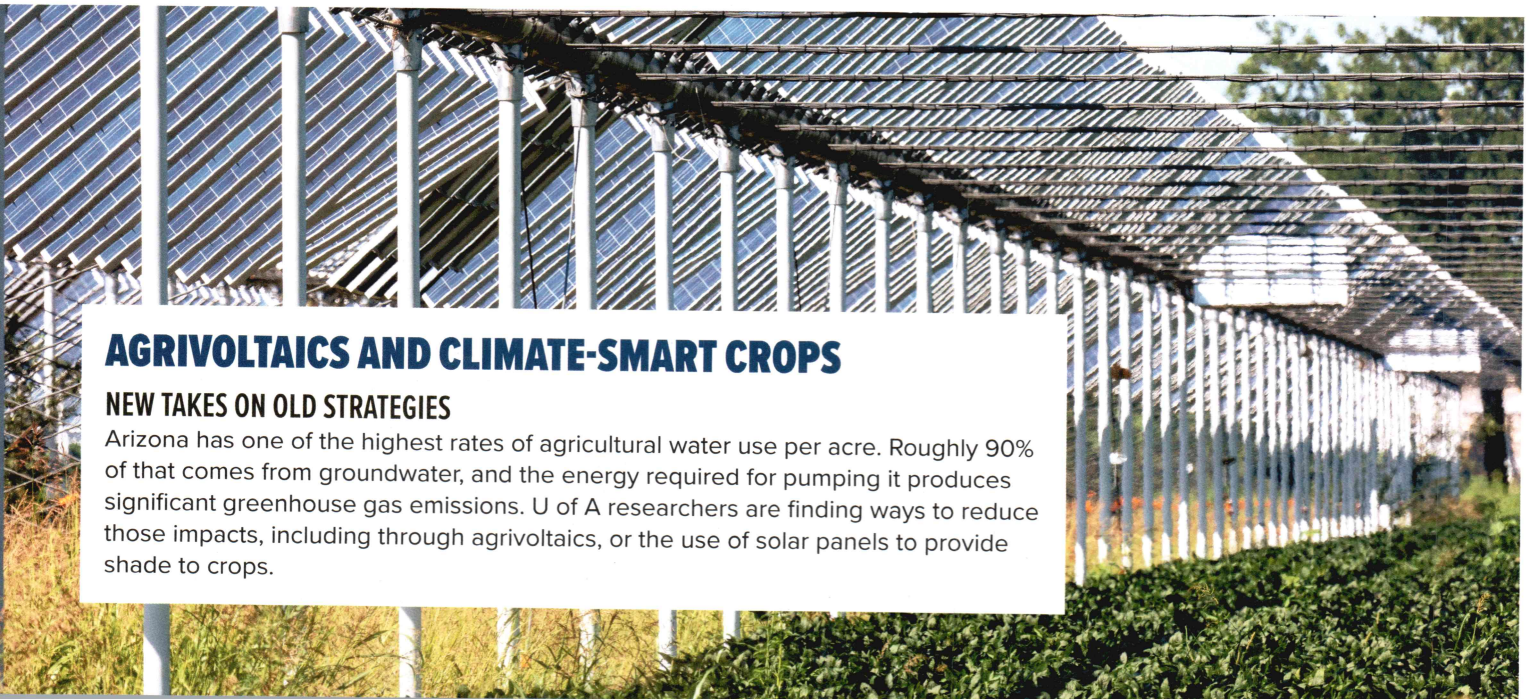
Kotutwa Johnson leads or co-leads several studies exploring traditions, adaptations and potential new directions related to Indigenous agriculture. As a 250th-generation Hopi farmer, he knows firsthand that families and communities can successfully raise crops by working in harmony with available resources and the environment.

Through his affiliation with the university's Indigenous Resilience Center, Kotutwa Johnson is leading the IndigeSEEDS research initiative, cultivating seeds from maize, gourds, squash and a variety of other traditional Indigenous crops in three locations: a U of A property in central Tucson, the community of Arcosanti in Yavapai County and his family's land on the Hopi Reservation.

The project will help farmers, scientists and tribal leaders understand how the locations' varying soils, elevations and temperatures affect the concentration of essential nutrients relative to calorie content of each crop. The study aims to provide data that can help Indigenous communities decide which crops to grow for specific environments and resources. The research could also help optimize agriculture decisions in arid and semiarid regions around the world.

—

Michael Kotutwa Johnson's work is funded in part through the Arizona Partnership for Climate-Smart Food Crops grant ($4.7M, USDA) and the Climate Resilience through Indigenous Co-Design at the Food, Energy and Water Nexus grant ($2M, Waverley Street Foundation).



AGRIVOLTAICS AND CLIMATE-SMART CROPS

NEW TAKES ON OLD STRATEGIES

Arizona has one of the highest rates of agricultural water use per acre. Roughly 90% of that comes from groundwater, and the energy required for pumping it produces significant greenhouse gas emissions. U of A researchers are finding ways to reduce those impacts, including through agrivoltaics, or the use of solar panels to provide shade to crops.

N. Levi Esquerra
Photo: Ryan Hunt

PARTNERING WITH TRIBAL NATIONS

AN INTERVIEW WITH N. LEVI ESQUERRA

N. Levi Esquerra, U of A senior vice president of Native American advancement and tribal engagement, offers his perspective on the U of A's commitment to expanding partnerships with tribal farmers and agriculture.

ON THE IMPORTANCE OF PARTNERING WITH TRIBAL NATIONS

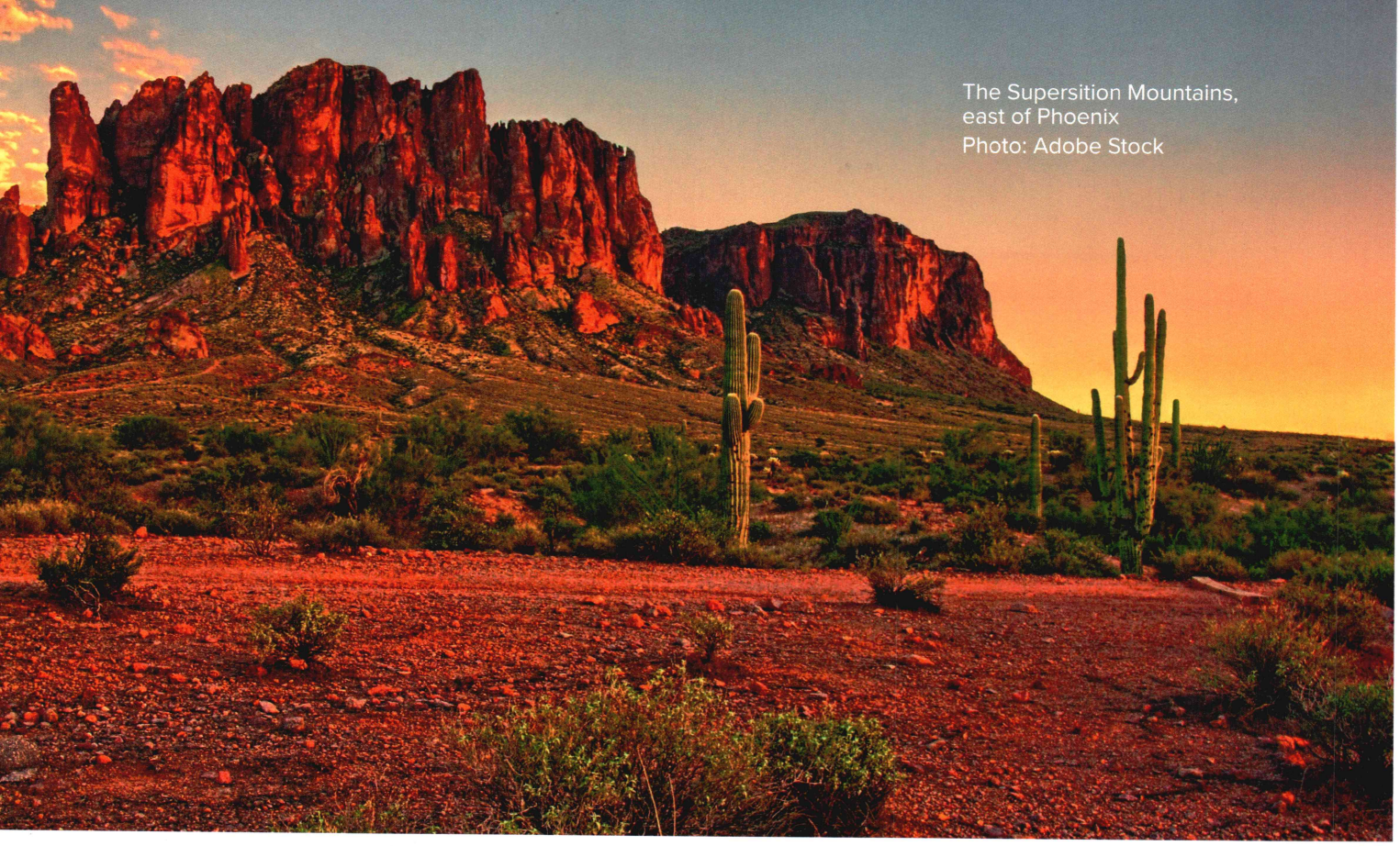
"On the one hand, it's just a natural fit, right? We're talking about generations and generations of knowledge — there's a steep learning curve that has already happened. And then there's the fact that nearly 30% of land in Arizona is federal trust land for tribes. When I walk into my office, I see 22 tribal flags reminding me that there are 22 sovereign nations we serve. Many of those are senior water rights holders who absolutely play an essential role in Arizona's future."

ON TRIBAL NATIONS IN THE FUTURE OF ARIZONA'S AGRICULTURE

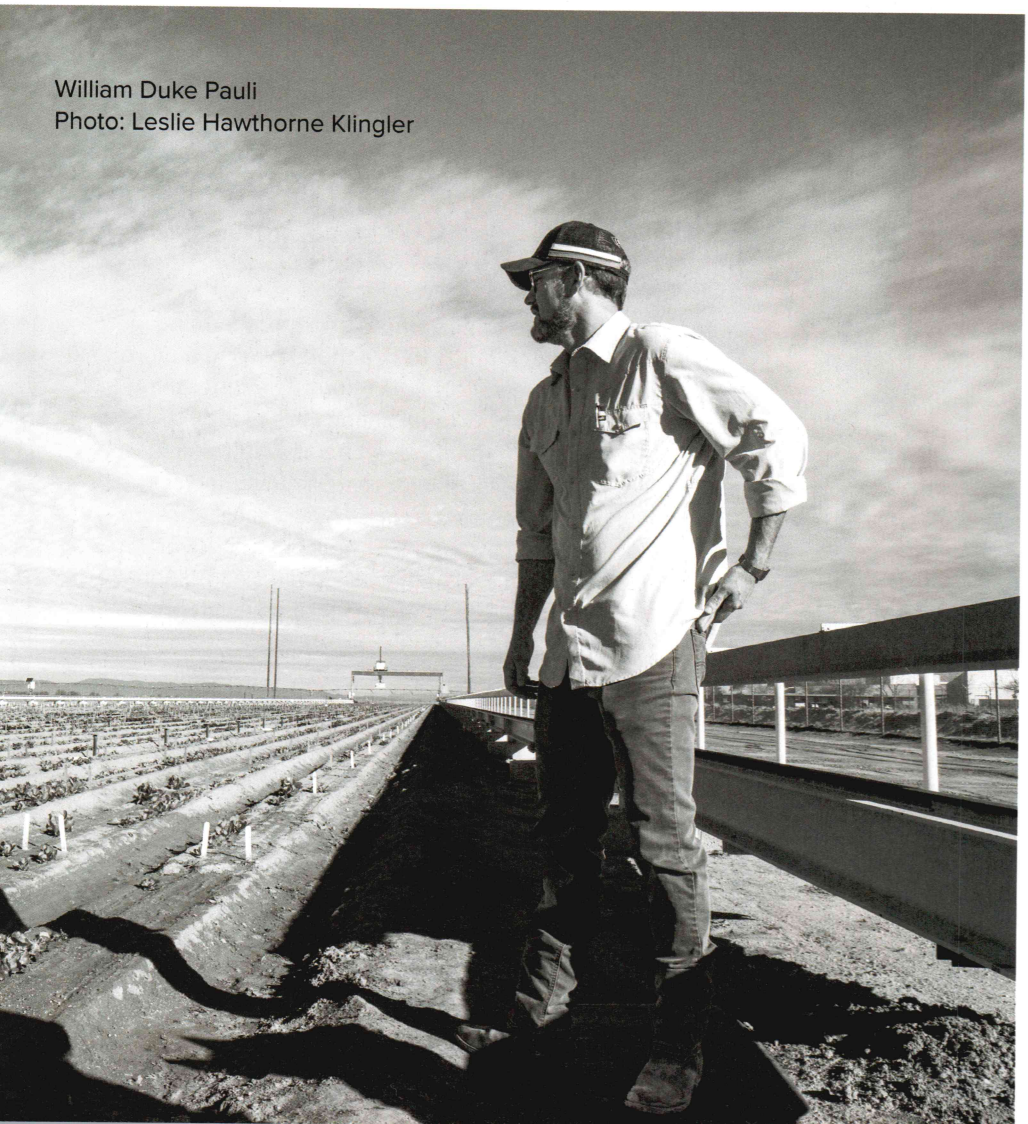
"As cities continue to push more and more farming away, I do think we're going to see tribes playing a more prominent role in the state's agriculture. The other thing that fascinates me is how tribal nations are blending traditional and modern methods to be as water-efficient and water-effective as possible. The Gila River Indian Community is installing solar panels over canals to reduce evaporation and cool the panels. The Colorado River Indian Tribes are now growing alfalfa, which is traditionally done with flood irrigation, using drip systems with great results."

ON BUILDING EQUITABLE RELATIONSHIPS

"The first time we met with Robert Miguel, chairman of the Ak-Chin Indian Community, our only talking points were to listen and learn. When we wrapped up three and a half hours later, he said it had felt like a Sunday dinner in his family home, talking with friends. By listening and not just dictating solutions, we can offer things that genuinely benefit our partners, not just check our own boxes. This can't be just the university extracting knowledge, so the most important thing is to prioritize listening and learning."



The Supersition Mountains, east of Phoenix
Photo: Adobe Stock



William Duke Pauli
Photo: Leslie Hawthorne Klingler

AGRICULTURE VS. CLIMATE CHANGE

STRENGTHENING CROPS

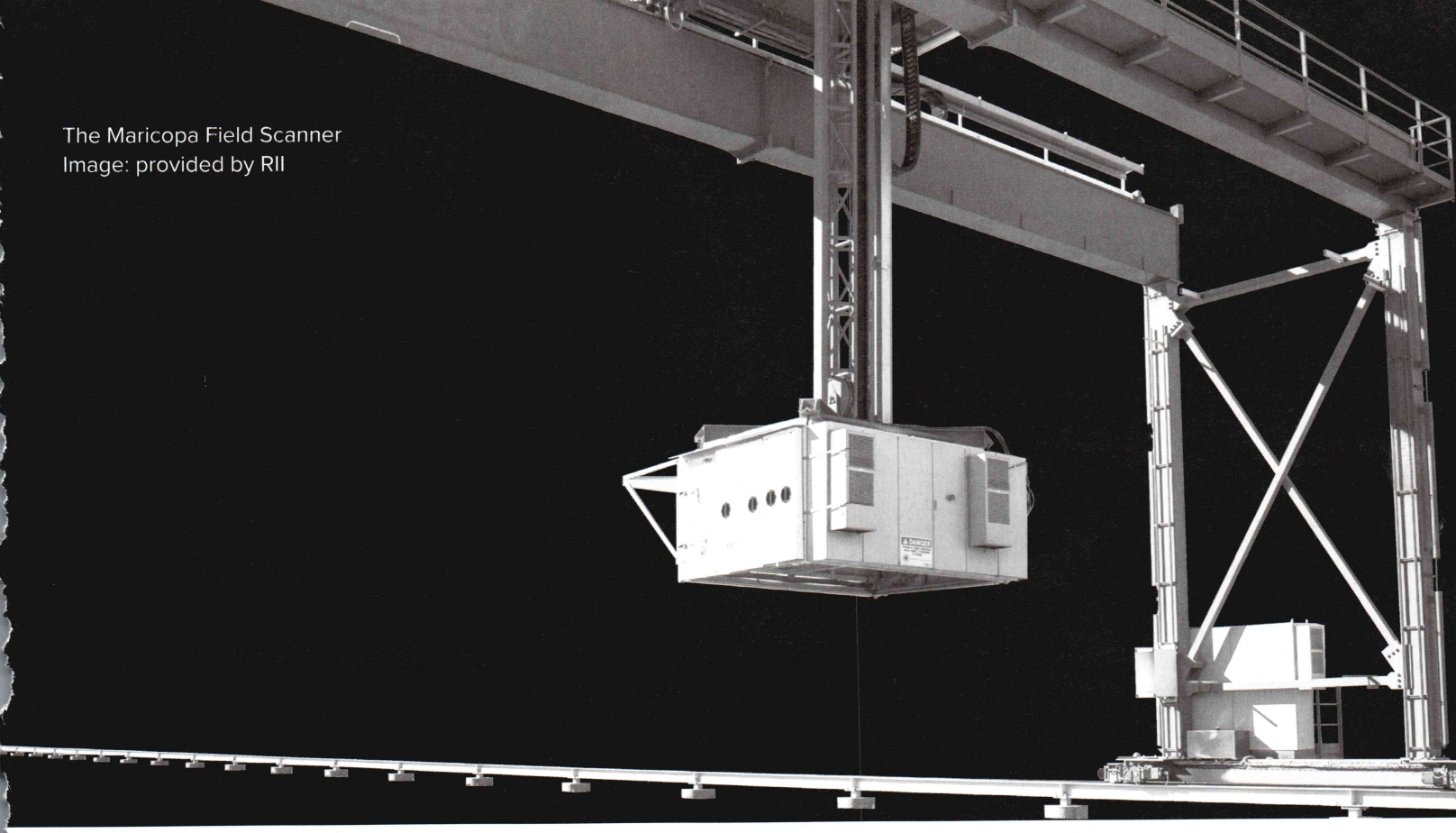
Given the stakes and nature of his work, William Duke Pauli is exactly where he needs to be.

"I often say that Arizona has the climate of tomorrow today," he explains, "and my research program is focused on the genetics of tolerance for abiotic stresses on plants, specifically heat and drought."

Associate professor in the School of Plant Sciences and director of the U of A Center for Agroecosystems Research, Pauli grew up in Montana. His work in genomics began there, mapping genes to improve the state's malting barley, harvested then at nearly a million acres a year.

Building on that work, today Pauli is creating the most advanced agricultural research platform in the world — one that rapidly accelerates research in a race against the clock of climate change.

Pauli's work is wide-ranging. Current



The Maricopa Field Scanner
Image: provided by RII

projects include modeling how water moves through cotton plants, finding ways to maintain yields with less irrigation and making discoveries that could rewrite a half-century's understanding of how plants regulate their water use. He's collaborating with plant sciences Professor Elizabeth Arnold in research on tepary beans, looking at their arid-land adaptations and how certain microbes make them more resilient. And through it all, he's been steadily building tools to revolutionize the speed and success of plant breeding programs.

Therein lies the throughline of Pauli's work: discovering how plant genes drive certain physical variations — ranging from the orientation of their leaves to the depth of their roots and how much water they need. It relies on high-throughput phenotyping (HTP), a general term for technologies that quickly measure multiple physical traits in a large set of plants, like an entire crop. At the U of A's Maricopa Agricultural Center, it's done with sensor-equipped drones and the robotic Maricopa Field Scanner — at 75 feet tall and weighing 30 tons, the world's largest — repeatedly passing over two acres of fields.

The datasets collected through HTP are both massive — the system generates more than 300 terabytes of data in one season — and complex. Analysis requires advanced algorithms, machine learning and AI, all working together to identify genes linked to desirable characteristics like drought resistance — traits that will be critical to food security in a hotter, drier future. That work happens on CyVerse, an open-science platform launched by the National Science Foundation and managed by the U of A, used by more than 100,000 scientists around the world.

But Pauli didn't stop with charts and words. He and his team built a system that turns all those measurements and high-resolution images into a crop's digital twin, replicated plant by plant in every stage of growth, each replica keyed to its associated data, including genomics. Newly integrated large language models (LLMs, like ChatGPT) allow scientists to perform real-time, voice-driven analytics through the system without writing even one line of code.

All these elements converge in a critical advantage: Crop improvement studies can now be done in a fraction of the time compared to traditional methods. "Phenotyping is one of the greatest limiting factors on the rate of crop improvement," Pauli says — a factor overcome by sophisticated modeling. And that matters, he notes. With climate change outpacing every prediction, we're running out of time to figure out food security as the world heats up.

'MY RESEARCH PROGRAM IS FOCUSED ON THE GENETICS OF TOLERANCE FOR ABIOTIC STRESSES ON PLANTS, SPECIFICALLY HEAT AND DROUGHT.'

"For everyone working in this field, there's so much we've always thought about, like 'If I could just do that, or just do this.' Now, here, those barriers are coming down. We have the right people. We have the Field Scanner. We have CyVerse. We have all the resources we need, and we're in the right environment at the right time. So now it's like, 'Yeah, let's do this.'" ◆

The Sky Provides

Brad Lancaster '91 is helping make rainwater harvesting accessible to all.

By Margaret Regan | Chris Richards photos

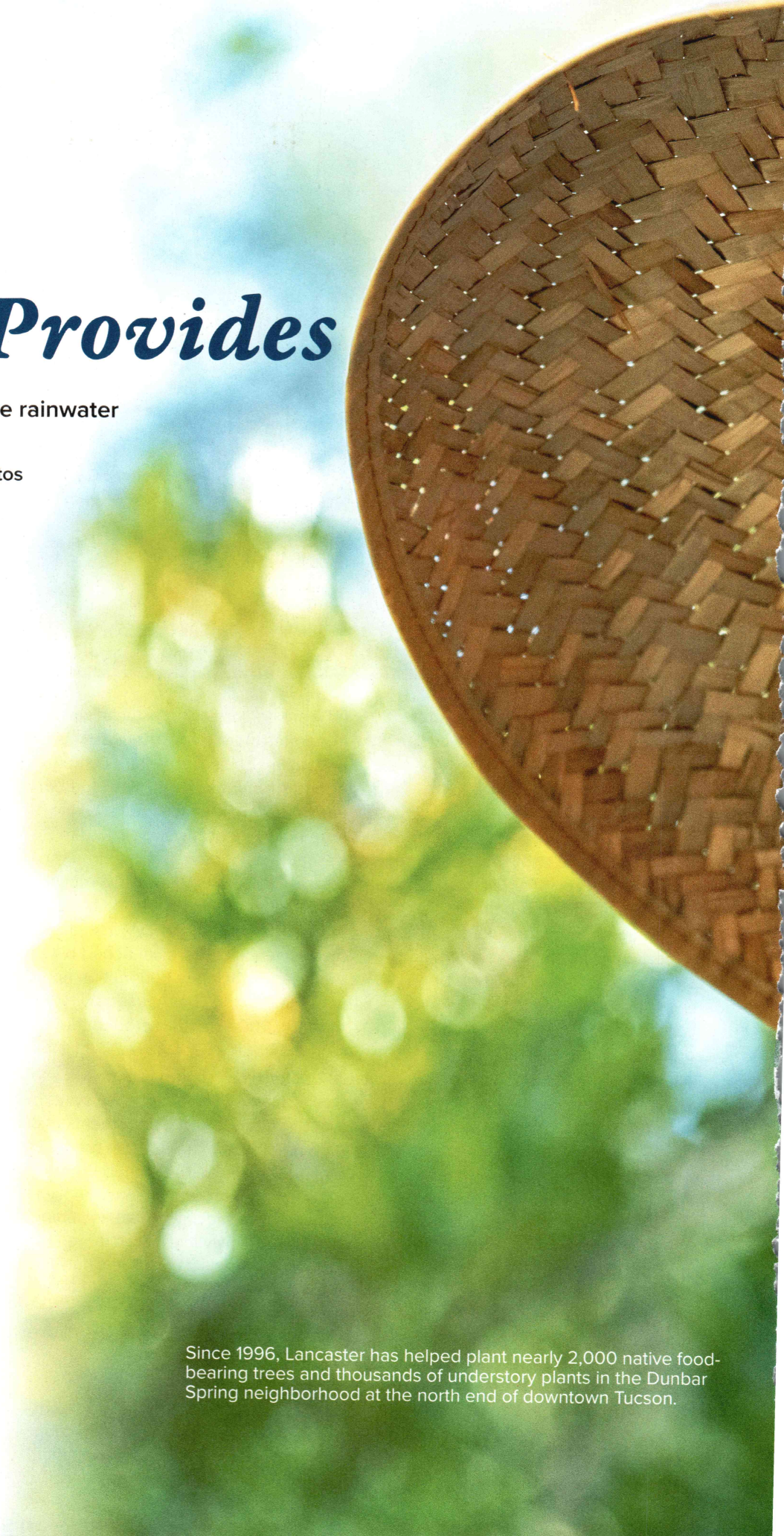
University of Arizona graduate Brad Lancaster '91 is a tall, striking man who you might see riding his bike or walking his Nigerian Dwarf goats down a block in Tucson's Dunbar Spring neighborhood. He's also the author of a two-volume book series, "Rainwater Harvesting for Drylands and Beyond," which has become essential reading for urban desert dwellers. Volume 1 is available in Turkish and Arabic, and a Spanish-language edition will be available in 2025.

Lancaster graduated with an interdisciplinary major in anthropology, humanities and Spanish. He was busy outside the classroom, too, volunteering with the Student Union Activities Board and helping start KAMP, the student radio station.

His time at the U of A cultivated a desire to see the world, and in 1995 he went on an adventure in Africa that would change his life.

In southern Zimbabwe, he met a man named Zephaniah Phiri Maseko. Maseko had designed a model farm, growing fruits and vegetables with only rainwater in a dryland similar to Tucson. "Mr. Phiri," as Brad affectionately calls him, "made it all click for me."

Promoting rainwater harvesting in desert climates became Brad's life's work. His home in central Tucson has become a showcase for how a landscape of food- and medicinal-bearing native plants can thrive using only the water that falls from the sky.



Since 1996, Lancaster has helped plant nearly 2,000 native food-bearing trees and thousands of understory plants in the Dunbar Spring neighborhood at the north end of downtown Tucson.

Lancaster's efforts have led to the harvesting of over a million gallons of street runoff in streetside and in-street rain gardens annually.

Brad and his brother, Rodd, moved to the Dunbar Spring neighborhood in 1994, just before Brad's African sojourn. They bought a run-down, 740-square-foot adobe house on a 1/8-acre lot. "Such a house was all we could afford," he says. "But it was an amazing learning experience as we figured out how to do the roof repair, electrical work, plumbing, carpentry, adobe restoration, et cetera."

The central neighborhood was a plus. "We loved that its location on the north side of downtown would enable us to get around most places by bike or foot," Brad says. He sold his VW truck in 1996 and hasn't owned a car since.

One of the first things that Brad and Rodd did was to plant new trees, with the goal of harvesting enough rainwater to grow them without tapping into the municipal water supply. Tucson only gets about 11 inches of rain a year, and since 1993, the city has relied on a supplement of water from the Lower Colorado River. That supplement arrives via the Central Arizona Project and, unfortunately, it's in jeopardy. As the Arizona Water Department reports, "The Colorado River Basin has been in a prolonged drought, exacerbated by climate change. We are experiencing the driest conditions in the basin in more than 1,200 years."

Brad and his brother now harvest about 100,000 gallons of rainwater a year on their small lot and adjoining public right-of-way. That's enough to meet their basic household needs, except in the driest years when they resort to the public water supply. It's become Brad's mission to teach others how to harvest and use rainwater, too.

On a hot and unexpectedly humid morning last fall, about 30 people joined him for a tour along Ninth Avenue just west of Stone Avenue. The folks gathered beneath the shade of mesquites and ironwoods to learn about rainwater harvesting firsthand.

Brad invited them to look all around. The first step, he tells them, is to observe your surroundings.

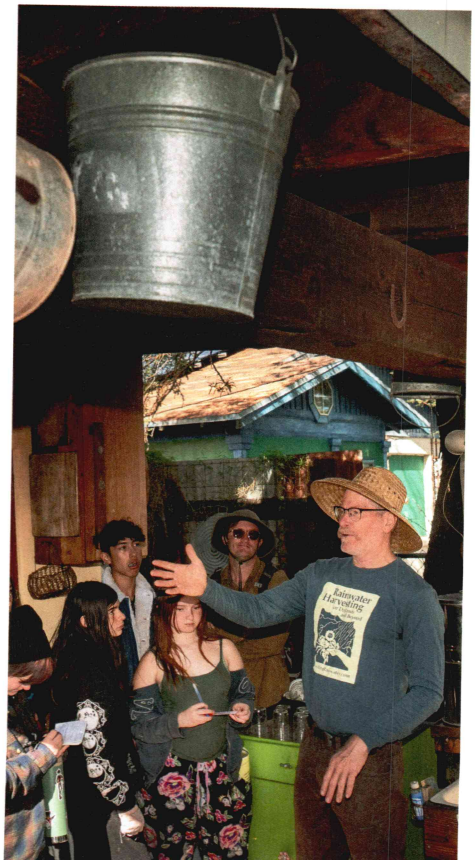
A dense thicket of desert shrubs grows along the curbside. The Lancasters had dug deep and wide into the ground, creating basins to capture rainwater. Their "harvest" waters the tall native trees they planted. Next, they erected earthen mounds, called berms, to channel water into the basins. And they went on to build more berms and basins in their backyard for gardens of hackberry, wolfberry and other fruit-bearing desert plants.

They also found ways to divert runoff from the street into their front yard. Brad laughingly tells the group that some of their methods were "pre-legal."

"We started on Sunday mornings, when no one from the city was watching. That's when we cut the curbs. The city finally realized and came to look at all the great stuff we were doing, and we started a dialogue. It took three years to legalize, but now it's not only legal to cut into the curb but incentivized [for homeowners] with a $2,000 rebate."

From the beginning, the brothers also worked hard to meet their neighbors. Brad recalls, "We would go knocking on doors, and we went to a bunch of neighborhood meetings. And then there were community potlucks, and we got to know more of our neighbors. We just kept having conversations, asking, what do we want as a community? ... How could we have more community interaction? One of the ideas that came up was, why don't we have a tree planting?" So Brad organized planting parties, and when they had the money, they paid local teenagers to help with the digging and the planting.

Now, more than 30 years later, Ninth Avenue and many of the surrounding streets are urban oases. The shade trees are still young, but they have filled out, and the desert shrubs underneath them grow tall and lush. In places, basins called chicanes, which look like islands of trees, have been dug in the street itself. They are carefully placed to slow



down speeding cars and encourage curbside parking.

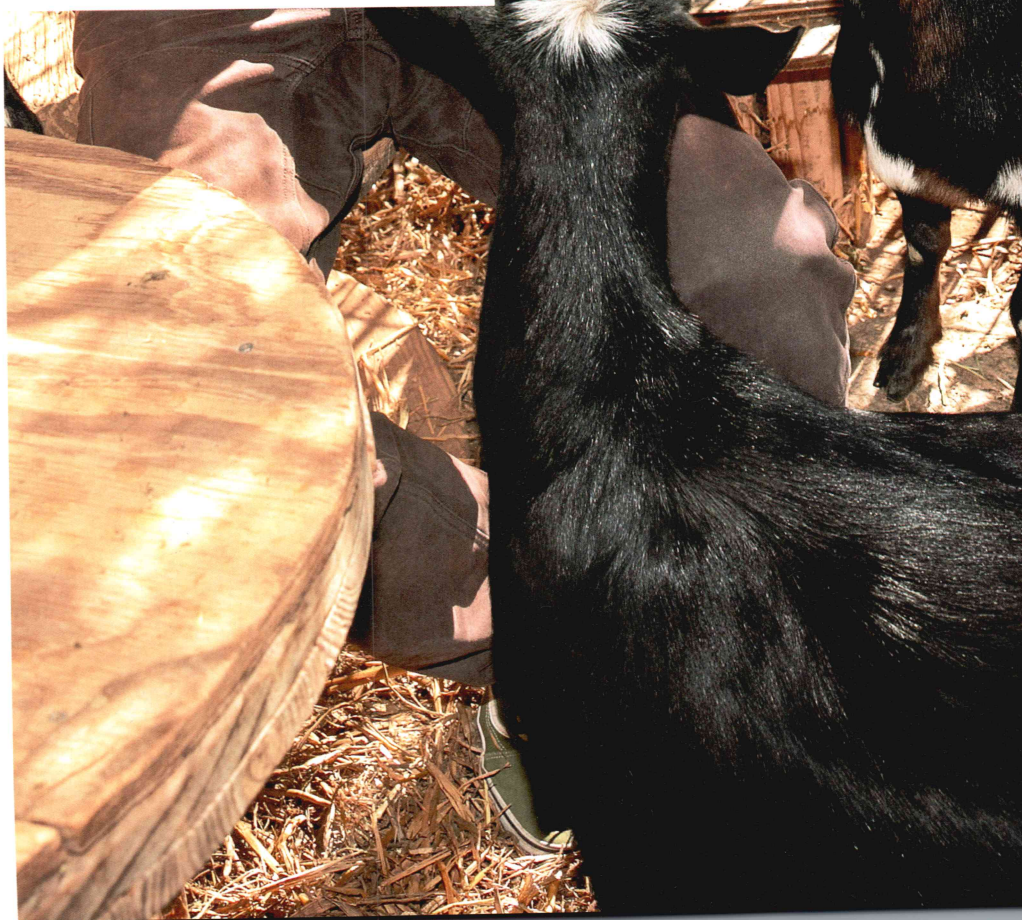
As the tour walked on, Brad showed off educational signs posted along the street. He designed some, while others were made in cooperation with the University of Arizona Campus Arboretum. Some outline the basics of rainwater harvesting, with before and after photos of streetscapes; others give the names of curbside plants — in Latin, English and Spanish, and some also in O'Odham and Yoeme.

Down the street is a community bulletin board, and up another block is a community checkerboard: a metal sculpture with a drawer full of chessmen and checkers. What better way to invite neighbors to come out and play?

The tour also explored the Lancasters' backyard to see more of the ways they harvest rainwater. A huge cement cistern and assorted water tanks collect storm runoff from the rooftops. An elaborate gray water system stockpiles water from two outdoor showers and a washing machine. In one corner, there are pens for Brad's chickens and the Nigerian Dwarf goats, his four-legged weed-eaters.

The Dunbar Spring tour is just one of Brad's many efforts to plant the seeds of rainwater harvesting. Along with a busy schedule of public talks, he's created a fun and lively website, filled with resources to inspire do-it-yourselfers: www.harvestingrainwater.com. You'll find interviews, podcasts and even a collection of songs about water by Tucson musicians. You can order his books, there, too.

Mr. Phiri would be proud. ◆



BIG BRAIN

By Stacy Pigott and Blair Willis

HOW U OF A RESEARCHERS AT THE CENTER FOR INNOVATION IN BRAIN SCIENCE ARE WORKING TOWARD A CURE FOR ALZHEIMER'S

Neuroscientist Roberta Diaz Brinton '79 '81 '84 believes regenerating the brain can mean regenerating a life. An expert in Alzheimer's disease and director of the University of Arizona Health Sciences Center for Innovation in Brain Science (CIBS), Brinton has built a career on bringing hope to an area of medicine where, historically, there has been very little.

"The grand challenge we are addressing is that in the 21st century, there is not a single cure for neurodegenerative diseases," she says, a category that includes multiple sclerosis, Parkinson's disease and amyotrophic lateral sclerosis, or ALS. "Our mission is to create innovations in brain science of the future for those who need a cure today. And our vision is vibrant brains that last a lifetime."

Brinton's area of expertise includes the aging female brain and regenerative therapeutics. One of her early innovations came in the 1990s when she was investigating the interaction between allopregnanolone, a natural neurosteroid in the brain, and nerve cells. One morning, she looked through a microscope at a culture of nerve cells, and noticed that there were more than the night before. She had just discovered that allopregnanolone promotes the regeneration of nerve cells within the brain.

This transformative discovery was the start of decades of research that led to ongoing clinical trials of allopregnanolone for Alzheimer's and Parkinson's diseases, a Presidential Citizens Medal from President Barack Obama and induction into the National Academy of Inventors.

Brinton led a 2021 CIBS study that focused on the effects of hormone therapy medications commonly used in treating the side effects of menopause — estrogens, progestins and combination therapies approved by the U.S. Food and Drug Administration — on neurodegenerative diseases.

During the study, Brinton and the research team examined the insurance claims of nearly 400,000 women aged 45 and older who were in menopause. The results, which were published in Alzheimer's & Dementia: Translational Research & Clinical Interventions, found that women who underwent menopausal hormone therapy for six years or more were 79% less likely to develop Alzheimer's and 77% less likely to develop any neurodegenerative disease.

They also found that the use of the natural steroids estradiol or progesterone resulted in greater risk reduction than the use of synthetic hormones, that oral hormone therapies resulted in a reduced risk for combined neurodegenerative diseases, and that hormone therapies administered through the skin reduced the risk of developing dementia. Overall risk was reduced the most in patients 65 years or older.

Additionally, therapy lasting longer than one year had a greater protective effect on Alzheimer's, Parkinson's and dementia than therapy of less than one year.

"With this study, we are gaining mechanistic knowledge," Brinton says. "This reduction in risk for Alzheimer's disease, Parkinson's and dementia means these diseases share a common driver regulated by estrogen, and if there are common drivers, there can be common therapies."

Brinton also co-authored a paper led by researchers at Weill Cornell Medicine and published in Scientific Reports demonstrating that the menopausal transition stage has pronounced effects on the brain's structure, connectivity and energy metabolism, and provides a neurological framework for both vulnerability and resilience.

Discovering Alzheimer's drivers

Coco Tirambulo's parents immigrated to the United States from the Philippines and operated assisted living care homes in Tucson. There, Tirambulo came to understand firsthand the effects of dementia, Alzheimer's and other age-related conditions.

"It was a very nurturing environment, like having many grandparents, aunts and uncles around," says Tirambulo, now a third-year medical and doctoral student who works with Brinton. "Growing up, I had no idea that a lot of them had chronic illnesses. But as I grew older, that's what led me to go into the health sciences, because, as a Filipino American, we have the mindset that we care for elders as they grow older."

Before medical school was even on her radar, Tirambulo earned two U of A master's degrees: one in epidemiology from the Mel and Enid Zuckerman College of Public Health and another in molecular and cellular biology as part of the Pre-Medical Admissions Pathway, or P-MAP, at the College of Medicine – Tucson. At the same time, she worked as a research specialist at the Arizona Center on Aging.

Tirambulo's work is focused on studying apolipoprotein E, or APOE, a gene that has been linked to Alzheimer's. APOE makes a protein that carries cholesterol and fats through the bloodstream. Different versions of APOE are more or less effective at moving fats. One version, APOE4, is associated with an increased risk of developing Alzheimer's and earlier onset of the disease, though some people with APOE4 never develop any form of dementia.

"Is the APOE4 protein a driver of the Alzheimer's disease pathology? It may not be an absolute, but it's definitely a risk factor," Brinton says. "If someone develops Type 2 diabetes and also is an APOE4 carrier, now you've got two risk factors instead of one. That makes APOE4 important for us to investigate as

Roberta Diaz Brinton
Photo: Chris Richards

a potential target for intervention."

Tirambulo is on track to complete her MD/Ph.D. in 2028. She envisions a future where there are treatments and even a cure for the disease that affects so many.

"Through her experiences growing up, Coco understands that when one person in the family has Alzheimer's, the whole family has Alzheimer's. That perspective inspires all of us," Brinton says.

Making data work

Part of the challenge of studying APOE is synthesizing the enormous amount of data available on the subject and discerning how that data might be used in moving toward a therapy or treatment.

Tirambulo uses data from the Wisconsin Alzheimer's Disease Research Center, whose large and diverse dataset of people who carry the APOE gene provides ample data for research discovery. Identifying commonalities provides Tirambulo with subsets of at-risk patient profiles she can explore for potential drug development.

"When I find commonalities in the data, I want to know what makes a person able to respond to a certain drug versus not respond. From there, I'm applying it to other people that have similar profiles," Tirambulo says. "The goal is that if this works for this person, this can work for you."

Ultimately, she hopes to find evidence that APOE4 could be a novel therapeutic target to help lower a person's risk of Alzheimer's development. From there, Brinton believes there could be a way to target APOE4 specifically or perhaps develop a drug that molecularly transforms APOE4 into APOE3, one of the gene variants that has a neutral effect on Alzheimer's development.

"Imagine if you could begin this precision medicine early intervention to change the trajectory of a person from being a high risk to a low risk, and it could be done through therapeutic interventions in midlife, long before their disease develops," Brinton says.

Mighty mitochondria

Fei Yin says most of the kids in his elementary-school class in China wanted to be scientists, but few knew what that meant — or what it took.

After completing his undergraduate studies in biochemistry, Yin matriculated at the University of Southern California, where his path became clearer. His doctoral adviser, Enrique Cadenas, was an expert in mitochondria, the "powerhouses" of the cell that generate the energy it needs to do its job. As a postdoctoral researcher, Yin worked with Brinton before she returned to her Wildcat roots and recruited him to join her at CIBS and as an associate professor of pharmacology in the College of Medicine – Tucson.

He has since devoted his career to unraveling the mysteries of mitochondria, including making discoveries about how faulty mitochondria might lead to brain diseases such as Alzheimer's. In lay terms, he discovered that the brain's self-cleaning machinery may be central to Alzheimer's: Specialized cells take out the trash in the brain; when they break down, waste builds up, possibly setting the stage for Alzheimer's disease.

Most mitochondria research in the context of Alzheimer's focuses on neurons, brain cells that consume a lot of energy to keep us perceiving, thinking and forming memories. But the Yin Lab shifted its focus to astrocytes, star-shaped cells that support neurons and remove waste products from the brain — waste products including lipids, fatty

compounds that are essential to brain function.

Scientists have been studying lipids since 1906, when Alois Alzheimer noted abnormal lipid structures in autopsied brains. But the bulk of Alzheimer's research focused on other phenomena, such as the buildup of abnormal protein structures including plaques and tangles in Alzheimer's brains. Drugs targeting these proteins have yet to result in a cure, though, leading to an expanded search for Alzheimer's root causes. Some scientists, like Yin, focus on lipids.

"About half the brain's dry weight is lipids, but they have turnover," he says. "Our studies suggest that mitochondria in astrocytes get rid of lipid waste in the brain."

When an astrocyte's mitochondria are impaired, they are unable to break down lipid waste. The Yin Lab discovered that when astrocytes are unable to efficiently process this waste, lipids accumulate in the brain like garbage piling up on the sidewalk, harming their neighboring cells and the brain environment.

Yin is now testing the hypothesis that lipid accumulation initiates or accelerates the progression of Alzheimer's disease.

"Lipid balance is important to maintain for brain function. If the balance is disrupted, there will be consequences," he said. "We believe that altered lipid turnover significantly contributes to neurodegenerative diseases, just as it does to metabolic and cardiovascular diseases."

Moving toward drug discovery

Human DNA might also hold clues to why some mitochondria go awry. The APOE4 gene, also studied by Coco Tirambulo, is the greatest genetic risk factor for Alzheimer's, which was previously shown to be associated with plaques and tangles. When Yin looked at the gene through his lipid-focused lens, he was intrigued to find that it was also implicated in mitochondrial dysfunction and lipid imbalance in astrocytes.

"We found that, compared to the normal form, APOE4 has a reduced ability to transport lipids to mitochondria in astrocytes for degradation," Yin says. "Now we're trying to determine how this disrupted lipid metabolism in early stages is connected to key hallmarks of the disease: plaques, tangles, neuronal loss and cognitive impairment."

Yin says his discoveries about lipid dysregulation as a central mechanism driving Alzheimer's disease — and APOE4's role in this dysfunction — are a highlight of his career so far, and he hopes they will be a meaningful contribution toward developing treatments not only for Alzheimer's but also for other neurodegenerative diseases.

"Disrupted lipid metabolism is not unique to Alzheimer's disease. There is accumulating evidence demonstrating lipid dysregulation in Parkinson's disease, in ALS, in Huntington's disease — nearly all neurodegenerative diseases," he says. "It could be a common mechanism underlying these devastating diseases." ◆

'THIS REDUCTION IN RISK FOR ALZHEIMER'S DISEASE, PARKINSON'S AND DEMENTIA MEANS THESE DISEASES SHARE A COMMON DRIVER REGULATED BY ESTROGEN, AND IF THERE ARE COMMON DRIVERS, THERE CAN BE COMMON THERAPIES.'

Fei Yin
Photo: Kris Hanning

Jake Bejar

Alli Rosga, Ariel Tobiasson and Lydia Quade

DINKING WITH THE 'CATS

Pickleball comes to the U of A.
By Kim Stoll | Chris Richards photos

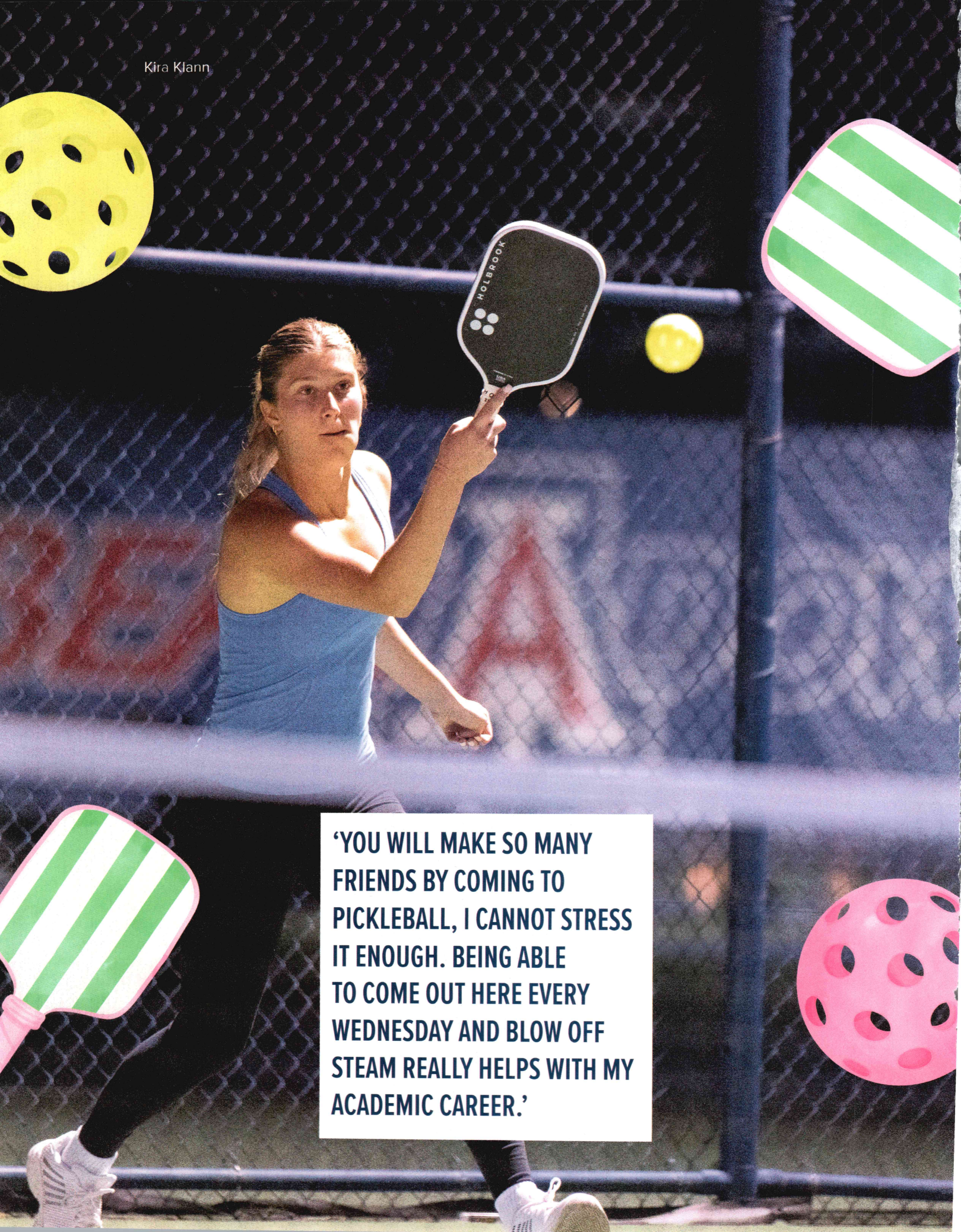
Students chat and laugh as they assemble and wheel what appear to be miniature tennis nets onto the courts. The sun has just set, and soon the distinctive "plonk" of perforated balls hitting paddles will fill the warm evening air. Students "dink" the balls back and forth, a soft lob over the net, warming up.

Pickleball: It's the fastest-growing sport in America for the third year in a row, according to the Sports and Fitness Industry Association. And the University of Arizona campus is following suit.

Started just three years ago, the U of A Pickleball Club already has 260 active members — the most of any club sport on campus. Its open play nights see close to one hundred participants each week. There's also a competitive team made up of the most dedicated and skilled players, the top 8-12 of whom play in collegiate tournaments at regional and national levels.

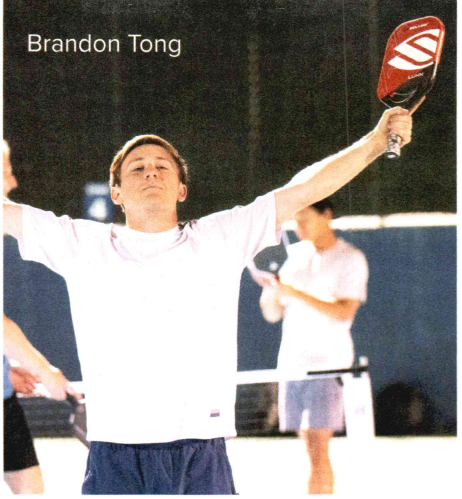
So, what accounts for pickleball's phenomenal growth? The members of U of A Pickleball agree: It's accessible, easy to learn and unusually social for a sport.

"You'll see people that are 90 years old playing, all the way to 5-year-olds. And that's what's so cool about [it], that it's so multigenerational," club president



'YOU WILL MAKE SO MANY FRIENDS BY COMING TO PICKLEBALL, I CANNOT STRESS IT ENOUGH. BEING ABLE TO COME OUT HERE EVERY WEDNESDAY AND BLOW OFF STEAM REALLY HELPS WITH MY ACADEMIC CAREER.'

Michael McDonald



Brandon Tong

Patrick Luu

Brandon Tong

and founder Michael McDonald, a junior studying mechanical engineering, says. "And it's a close enough sport where you can still talk to people and joke around."

Faculty adviser and team coach Allison Hays '97 '05 says pickleball's similarities to badminton, tennis and ping-pong make it easy for people to learn and start playing right away. "We play it at family reunions," she says.

McDonald, who took up the sport during the pandemic, is a case in point. "I was a basketball player, but then during COVID everything was shut down," he says. "I started playing pickleball at the neighborhood park with my dad. It was something we could do together, and outside."

Engineering management major and club vice president Brandon Tong got a similar start. "My dad was part of a neighborhood group and they needed an extra player," he says. "That's why I started playing, and it's been a blast ever since."

The club currently practices on Campus Recreation tennis courts using mobile pickleball nets, an arrangement that has caused a little friction with the local tennis community. Tong says the sport also gets a bad rap from tennis players because of a perception that it lacks seriousness.

"Pickleball has kind of a stigma that it's maybe not very athletic," says McDonald. "But I would say they're wrong; it can be very tiring, and it can be very competitive as well."

Ultimately, the club hopes to raise funds to get dedicated courts to accommodate the ever-growing number of people looking to play. "If tennis players who don't like pickleball just come out and try it," Tong says, "I'm sure they'd have as much fun as we do, if not more."

Club member Olivia Lubenow is a good example. A sophomore business management major who played tennis in high school, she fell in love with pickleball at the U of A because it offered a way to be social and competitive at the same time. "You will make so many friends by coming to pickleball," she says. "I cannot stress it enough. Being able to come out here every Wednesday and blow off steam really helps with my academic career."

There are lessons in it, too. "I like to drive the ball, and I'm learning to have the patience to just chill and take a step back and get my reset in," she says. "I can translate that to my day-to-day life: taking a step back instead of rushing into everything; relaxing and figuring it out step by step." ◆

Follow the club on IG @ua_pickleball

TEAM PLAYER

Freshman forward Carter Bryant is using his platform to give back to the deaf community that helped raise him.
By Sarah Kezele | Arizona Athletics photos

Carter Bryant

Arizona men's basketball freshman Carter Bryant first saw his future as a Wildcat when he was 6 years old. He was at McKale Center watching his aunt, Shaquillah Torres, tear up the court as an outside hitter for Arizona volleyball.

For three seasons, Bryant and his family made the seven-hour drive from Riverside, California, to Tucson. He remembers two things about those trips: They always stopped at No Anchovies on University Boulevard for pizza — classic pepperoni for him — and McKale was always packed.

"You walk in, you've got people screaming and getting all rowdy for a volleyball game, and you're just like, 'what's going on?'" Bryant says.

"That was the first thing that caught my eye."

Bryant was captivated. He decided that he, too, would be a Wildcat one day.

"I always used to tell everybody: Arizona is my school."

But while sitting in the stands at McKale, watching his aunt play, Bryant didn't know if he'd play a sport at U of A — only that he would attend. Still, the seeds of a basketball career had been planted: His dad, D'Cean Bryant, was a coach for the girls' team at the California School for the Deaf in Riverside. As the coach's kid, the younger Bryant spent countless hours hanging around the CSDR campus after school.

"It was my life," he says. "I was going to baseball games. I was going to softball games. I was going to seven-on-seven football games. I was always going to basketball games. ... I would be in there, watching, shooting on the side. That's all I knew. That was my life growing up."

Bryant is a grandchild of deaf adults, or GODA. His grandfather, Mike "Doc" Torres, is a member of the USA Deaf Basketball Hall of Fame. His grandmother, Shelly Freed, is a longtime educator and administrator at the California School for the Deaf. His mother, Sabrina Torres, is a sign language interpreter.

Before Bryant could talk, he was learning to sign. The first word he signed? "Ball."

Seriously.

Bryant moved a step closer to his Wildcat dream during his sophomore year of high school when Arizona head basketball coach Tommy Lloyd and associate head coach Jack Murphy attended one of his practices.

Of course, it just happened to be one of the worst practices of his basketball career.

"I was missing dunks," Bryant recalls. "I was missing shots. I don't usually have airballs. I was all over the place defensively. I just felt like I could throw up the whole practice because I was so nervous.

"After practice, I just cried for, like, 15, 20 minutes. I was like, 'I'm never going to get to go to Arizona.'"

Lloyd assured him that his dream was still achievable. He encouraged Bryant to keep working on his game. Each time Lloyd returned to watch Bryant play, he gave the aspiring Wildcat two new things to focus on. At the end of his junior year, Bryant gave his verbal commitment to play at Arizona. His senior year, Bryant was a top-20 player in the country and was named a McDonald's All-American, the highest honor for a high school basketball player.

"Going back and looking at it now, he was transforming me as a player," Bryant says.

Bryant's childhood dream finally came true Nov. 4, when he played his first regular-season game in an Arizona uniform, a 93-64 win over Canisius. The night before, he didn't fall asleep until about 4 a.m. His mind was racing, replaying everything — and thinking of everyone — that had led him to this moment. His parents, his grandparents and his time spent at the California School for the Deaf were top of mind.

The forward played 16 minutes off the bench, adding six points, a rebound and a steal. It wasn't a star performance, but Bryant knew he was exactly where he was meant to be.

"It was awesome," Bryant says of his Wildcat debut. "Being in the moment allowed me to just have fun and enjoy the crowd. ... It was probably the most fun I've ever had playing basketball."

As his profile rises, Bryant intends to bring awareness to the Deaf community and hopes to host basketball camps in Tucson and at the California School for the Deaf as soon as next summer. Part of it, he says, is using his platform to make an impact. Part of it's giving credit where credit's due.

"They deserve it," he says. "They're amazing people." ◆

'IT WAS AWESOME,' BRYANT SAYS OF HIS WILDCAT DEBUT. 'BEING IN THE MOMENT ALLOWED ME TO JUST HAVE FUN AND ENJOY THE CROWD. ... IT WAS PROBABLY THE MOST FUN I'VE EVER HAD PLAYING BASKETBALL.'

CLASS NOTES

1960s

Terry Bahill '67 received the INCOSE Founder's Award from the International Council on Systems Engineering. The award recognizes his leadership in founding the Fellows Committee and organizing the Fellows Selection Committee. Terry has supported early chapter development and research work demonstrating systems engineering in a variety of domains. He was a professor of systems and industrial engineering at the U of A from 1984 to 2011 and now is an emeritus professor of systems and biomedical engineering.

1970s

Robert Moffit '71 '75 recently published his book "Modernizing Medicare" (John Hopkins University Press). He is a senior research fellow at The Heritage Foundation's Center for Health and Welfare Policy. Robert previously served as a senior official of the U.S. Department of Health and Human Services and the Office of Personnel Management during the Reagan administration.

David Soukup '76 was named a fellow of the Institute of Industrial and Systems Engineers. He is the managing director of governance at the American Society of Mechanical Engineers and has served as an adjunct professor at New York University's department of industrial engineering for 25 years. He is a licensed professional engineer and certified association executive.

Barney Popkin '79 lectured on international development projects at Atria Campana del Rio. He has recently published articles in The Professional Geologist and the International Journal of Levant Studies as well as letters in the Arizona Daily Star covering topics such as Gaza's water resources, Levantine resources, geologic impacts on Napa Valley wines and hurricane mitigation.

1980s

Silviana Wood '83 published her novel "La Quinta Soledad," a part fiction and part memoir story about a neighborhood typist and scribe from Barrio Anita in Tucson, Arizona (Aztlan Libre Press).

Daniel Tirus Odhiambo Orlale '84 is a biographer, media trainer and public speaker. After graduating, Daniel served as bureau chief for Nation Media Group in Kenya for 21 years and then worked for 16 years at the African Women and Child Feature Service. Daniel recently published his book "The Odyssey: 40 Years of Journalism in Kenya," now available on Amazon (Intercen Books).

Wolfgang Golser '86 has been traveling the world. He explored Japan, where he visited Osaka, Koyasan, Hiroshima, Miyajima, Kyoto, Hakone and Tokyo. He successfully hiked Mount Misen and trekked along the rim of a volcano in Hakone. A highlight of his trip was visiting Hiroshima's Peace Memorial Museum.

1990s

Sallie Cochren '91 self-published her book "Let the Purring Begin: Sapphire's Tale," a story about a cat named Sapphire who surprises her new owner with four kittens. Sallie has taught middle school language arts for 16 years in the Marana and Tucson Unified School Districts.

Scott Long '92 launched Mobile Edge Consulting LLC, a global consulting firm. It offers a comprehensive suite of services including strategic planning, product launch strategy, contract negotiation planning, sales channel optimization, mobile marketing and market research. Learn more at mobileedgeconsulting.com.

David Flanigan '93 is the associate dean for non-residential graduate education at Johns Hopkins Whiting School of Engineering.

Lisa Belcher '94 is a film director and owner of Jump Rock Pictures production company, which she founded while living in Hong Kong. Now based in Austin, Texas, Lisa is set to release her film "House of Abraham" in 2025.

John Larson '96 received a 2024 Emmy Award for Outstanding Picture Editing for a Structured Reality or Competition Program for his work on NBC's "The Voice." John has been with the show since its premiere in 2011 and has served as supervising editor since 2013. He has received a total of five Emmy nominations.

Jason Antonino '98 earned a Teaching English as a Foreign Language certification in Guadalajara, Mexico. He completed 140 hours of training and graduated with merit. He plans to return to Mexico in 2025 to begin a TEFL career at age 50. Currently a patent examiner in Tucson, Jason's career journey has included roles in engineering, nonprofits, legal services, patent research, insurance and entrepreneurship.

Kristina Petrocco-Napuli '98 was promoted to vice president of Logan University's College of Chiropractic, where she now oversees the Office of the Registrar. Kristina was the founding president of the American Chiropractic Association's Council on Women's Health and recently was elected to a second term as chair of the Council on Chiropractic Education, leading its first all-female team.

2000s

Stephen Acquafredda '01 was recently selected as Engineer of the Year by the Arizona Water Association. Stephen is the principal engineer for the City of Glendale's Water Services Department. His team is responsible for improving Glendale's water and wastewater infrastructure.

Suzanne Singer '03, a Diné woman, was named a Grist 50 honoree. The award recognizes people who are developing innovative, real-world solutions for a sustainable future. Suzanne is the co-founder and executive director of Native Renewables, a nonprofit that installs off-grid solar power and battery storage to homes on the Navajo and Hopi reservations. The team has brought solar to 90 homes since its founding, including more than 20 this year alone.

Jennifer Wilcox '04 was recognized as a Grist 50 honoree. A pioneer in carbon capture research, Jennifer authored the first textbook on the subject and helped shift the Department of Energy's focus from production to pollution reduction. She is a presidential distinguished professor of chemical engineering and energy policy at the University of Pennsylvania.

Tara Franks '05 received the 2024 Phoenix Titan 100 award, which recognizes the area's top 100 CEOs and C-level executives. She currently is the chief operating officer of Translational Drug Development, a leading oncology contract research organization. Tara was a member of the U of A women's soccer team.

Scott Matlick '05 '10 has been promoted to president and CEO of the Ronald McDonald House Charities of Southern Arizona. Before joining the RMHC team, Scott was the associate director of the Pride of Arizona Marching Band from 2008 to 2013.

Christina Parisi '05 is the director of strategic marketing for Hydronalix Inc., where she will support the commercialization of technologies, patents and inventions developed by Small Business Innovation Research.

2010s

Cary Groner '09 published his second novel, "The Way" (Spiegel & Grau), a story set in a postapocalyptic world that has been reclaimed by nature.

Garrett Smith '10 and **Michael Gombrich '12** received the 2024 Five Star Wealth Manager award, a distinction given to fewer than 7% of wealth managers in the region. The award is based on research by Five Star Professional, a third-party research firm.

Rebecca Jones '11 recently published her third novel, "Staying the Course" (Bella Books). Her first book, "Steadying the Ark," was a finalist for the 2023 Golden Crown Literary Society Goldie Awards in the Mystery/Thriller/Crime category.

2020s

Mary Newlyn '20 graduated as a fellow in the 2023-24 class of the Appalachian Regional Commission. She is the executive director of the Hope in Action Alliance, a West Virginia-based coalition focused on strengthening and building capacity to integrate services, invest in youth and families, and increase economic opportunities in the region.

WEDDINGS AND FAMILIES

1. **Herman Lucero '80 '98 '01 '04** and his wife, Consuelo, celebrated their 70th wedding anniversary last November, and both celebrated their 90th birthdays in August.

2. **Jessica Dalton '11** and **Sean Rambaran '15** were married July 18, 2024, at Zion National Park in Utah. The couple made their vows in front of their family and close friends.

3. **Amanda Schumacher Yell '08** and Paul Yell welcomed daughter Audra Catherine Yell Jan. 31, 2024, in Raleigh, North Carolina.

4. **Kayla Patrick '11** and **Calvin Coleman '17** welcomed future Wildcat Rhys Coleman in February 2024.

5. **Alison Stine '13** welcomed future Wildcat Sadie Stine July 3, 2024.

6. **Cameron Moon '13** and **Rebecca Perkel '14** were married June 1, 2024. The couple met at the U of A in 2011 and have been together for the past 10 years.

7. **Morgan Olson '18** and **Alyssa Yanez '23** tied the knot in Tucson April 12, 2024. Alyssa is a software engineer and Morgan is a pilot.

8. **Anusha Vishnubhotla '19** married Rohit Chamarthi March 28, 2024, in Hyderabad, Telangana, India.

FAREWELL, DEAR FRIENDS

Honoring Wildcats who have passed away

John H. Ladd '48
Virginia I. Phillips '48
Clayton E. Niles '49
Carl A. Inglish '50
Robert S. Sundt '50
Fred H. Johnson '52
Alfred E. Celaya '53
Mary K. Kirk '53
Roland P. Beeler '54
Thomas H. Latimer '54
Janice M. Stoner '54
Helen W. Tang '54
Mary Ellen Cutlip '55
Douglas S. Holsclaw '56
Karl F. Kohlhoff '56
Jerome R. Koupal '56
Elissa H. MacLean '56
Marjorie S. Witman '56 '64
Froilan H. Cota '58
Kenneth I. Lange '58
Theodore E. Woods '59
Robert J. Hirsh '60 '64
Ray H. Johnson '60 '61
William J. Klaus '60
Christopher W. Roberts '60
Gayle E. Siroky '60
Frank W. Uvodich '60
Albert E. Bartz '61
Douglas C. Draper '61
James M. Hill '61
Marya D. Keeth '61
David R. Murray '61
Joette D. Gambs '62
Peter G. Nelson '62 '67
Mark C. Rowland '62 '65
Patricia C. Booth '63 '67
Robert Christie '63
Laurie K. Manhard '63
Katherine S. Melsa '63
Robert M. Skelding '63
Malcolm L. Terence '63
Jerome L. Anderson '64
Charles A. Ditsch '64
David L. McVey '64
Dante E. Paluselli '64
Sally A. Rea '64
Maurice J. Saroni '64 '66
Diane P. Hoffman '65
Mary E. Stafford '65 '68 '81
Robert S. Alcumbrac '66 '73
Stephen J. Slavin '66
Michael N. Bernal '67 '71
Barry E. Bettner '67
Richard L. Caldwell '67
Thomas C. Grissom '67 '69 '73
William E. Horst '67
Michael J. O'Grady '67
Leo A. Roop '67
James S. Fleming '68 '71
Dean E. Guenther '68
William W. Hess '68
John A. Heuvelman '68
Howard D. Hinson '68
Paula M. Schade '68 '69
Thomas J. Sutton '68
Maxine B. Switzer '68
James R. Maneval '69
Virginia B. McCoyx '69
Barbara E. Borgersen '70 '72
Ronald A. Haller '70
Lillis L. Kingman '70
Michael A. Nelson '70
Bruce E. Rippeteau '70
William J. Bartley '71
Robert K. Sisley '71
William J. Stoeber '71
Sarah C. Baker '72
Alan L. Buseman '72
Kenneth R. Chiaro '72 '73 '84
Patria Griffin '72
Kerry L. Baldwin '73 '79
Michael E. Campana '73 '75
Mary C. Wing, M.D. '73
Debra C. Brenner '74
Phyllis N. Goins '74
Terrance L. Hagen '74 '81
Donald G. Hendricksen '74
Mary A. Karr '74
Kenneth F. Lyon '74
Dr. Joan M. McGillicuddy '74 '76
Johanna B. Stein '74
Karen B. Van Lenten Harris '74
Tommy F. Gin '75
Stephen J. Lyding '75
Susan A. Matt '75
Timothy R. McGinley '75
Sara E. Weatherford '75
Judith C. Abrams '76 '60
Patrick G. Cunningham '76
Ann C. Heine '76 '81
Robert J. Brooks '77
Stephen C. Castle '77
Kathryn A. Hardy '77
Wendy H. Netzky-Jolly '77 '79
Thelma E. Davis '78
Donna M. Friesen '78

Dale K. Patton '78
Rosemary D. Stewart '78 '80
Barbara J. Gray '79 '86
Michael J. Murray '79
Patrick E. Rankin '79
Hazel V. Dean '81 '83
Steven G. Gregg '81
Steven A. Maril '81
Rubye M. Roach '81 '83
Brian J. Williams '82 '86
Judith F. Anderson '83
Hazel Virginia Dean-John, Ph.D. '83
Enriqueta Q. Najperk '84
Judith Kanner Gordy '85
James Howe '85
Louis E. McMurray '85
Daniel J. Benkert '87
Mark W. Hurlburt '87 '95
Karen L. Dilka '88
Laura L. Fingleton'88
Hannah M. Fisher '88
Michael V. Montgomery '88 '92
Terra L. Billingsley '89
Charles E. Simon '90
Thomas E. Hughes '91
Gary S. Wallace '91
Vickie M. Peck '92
Carolyn F. Stevens '92
James R. Veomett '92
John R. Heigl '96
Thomas P. Alexander '97
Barbara M. Kausen '99
Susannah Elwyn '00
Dallas S. Green '01
Elizabeth M. Byrd '04
Leslie P. Frayne '05
Michael B. Saunders '06
Jeff P. Swedenhjelm '24

ALUMNI IN FOCUS

The Alumni Engagement team is creating deeper bonds with Wildcats everywhere. By Zoe Montaño | Chris Richards photos

The Alumni Engagement Team

Each summer, as the sun warms the trees and the crisp mountain air of Pinetop, Wildcats gather for a weekend of golf, community and tradition.

The Bear Down in the Pines tournament is about more than strolling on the green. The annual event has raised thousands of dollars for student scholarships while bringing Wildcats of all ages and backgrounds together to celebrate over their shared bond with the University of Arizona.

"Some of the participants have been golfing in this for 20-plus years," Jonelle Vold '01 says, her smile wide and welcoming. This past summer, she attended Bear Down in the Pines alongside several members of the alumni team and a large group of local volunteers. "It was amazing to see everyone put their time, talent and treasure to support the next generation of Wildcats."

For Vold, who now oversees the team that organizes the tournament, the experience is particularly meaningful: In August, she became the first senior vice president of alumni engagement and prospect development at the U of A Foundation. Saying she was excited for her first day would be an understatement.

"I love this university. I am a proud Wildcat alumna, and I am thrilled to take on this amazing opportunity."

Vold is excited to grow a cohesive, Wildcat-focused team to lead alumni engagement for the university. "As stewards of the alumni relationship, we have a real opportunity to connect heritage, tradition and pride," she says. "We have put together an incredibly talented team of engagement professionals who are passionate about this university. We are building on the great foundation of those that have done this work before us and leaning into technology and other new and innovative ways to grow alumni communities."

Under Vold's leadership, the alumni team, including Krista Voth, the interim executive director of the team, is reimagining the ways Wildcats can stay connected, whether through regional chapters and clubs or returning to campus to enjoy the 100-plus-year tradition of Homecoming, which has been organized by Associate Director of Alumni Events and Traditions Lisa Valentine '91 '97 '03 for over 20 years.

"There is so much happening at the university," Vold says. "Most people know about the Athletics side of the house, but we also have amazing arts and cutting-edge research. If you were a student here 50 years ago, you might not be aware of all the incredible research happening at the university that's making all our lives better. We want to share the magic of this university with alumni across the country to give all of our alums something to be proud of."

Vold wants alumni to benefit from connecting with one another. "When I think about the people who have helped me get to where I am, or anytime that I was stuck, I've gone back to Wildcats," she reflects. "I've called friends from law school and mentors from my time at the university."

One of Vold's favorite moments in her new role came at Homecoming, when she inducted the newest members of the Silver & Sage Society, which honors alumni who graduated 50 or more years ago. She met with three groups of alumni who attended the event with their former college roommates, a reminder of the lifelong relationships formed at the University of Arizona.

"When I meet alums, the chance that they've had a good experience is pretty substantial. The chance that they've had a great experience is even higher," she says. "People come here because they are looking for that unique Wildcat experience, where the entire community is centered around the university. To have the opportunity to meet people and hear their stories is inspiring." ◆

GET CONNECTED

Alumni Chapters

Alumni chapters serve as the backbone for Wildcat networking all over the country. With an extensive web of over 200 dedicated board members, chapters share a common goal: to create connections among alumni in their city.

Alumni Clubs

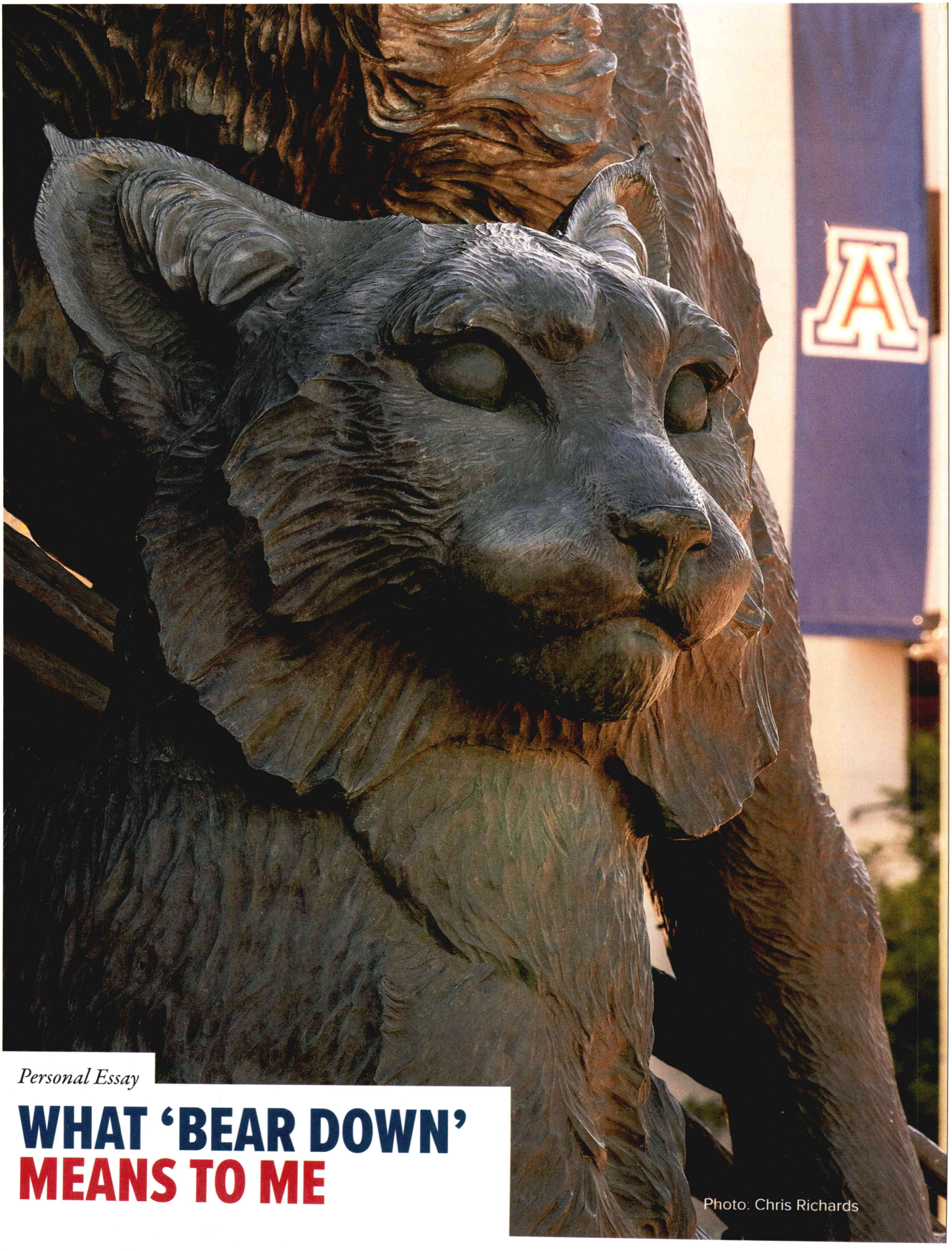
Alumni clubs are dedicated to connecting Wildcats seeking fellow alumni with similar cultural backgrounds and experiences. Alumni give back by supporting students from diverse backgrounds through initiatives such as retention programs, scholarships and other programs tailored to their communities.

Wildcat Mentor Society

The Wildcat Mentor Society offers a unique experience that connects world-class alumni with future leaders. Through the program, mentees can grow their professional development skills, play a part in their alumni network and establish strong relationships that extend beyond the duration of the program.

Bear Down Network

The Bear Down Network is an online networking platform with over 40,000 alumni participants, offering a range of opportunities including networking and up-to-date event information.



Personal Essay

WHAT 'BEAR DOWN' MEANS TO ME

Photo: Chris Richards

To be honest, I've never been a spirit-driven, rah-rah kind of guy. Which is ironic, because as creative director for University of Arizona Philanthropy and Alumni Engagement, it's my job to understand the Bear Down spirit and reflect it back to our alumni.

After meeting Wildcats from all walks of life, I've found that the subtle shades of pride Wildcats express simply by pursuing their passions, in all professions and fields of study, add up to a richer and deeper sense of spirit than any one of us could express alone.

Take me, for example. I came here for graduate school — creative writing. I decided to attend not because I understood the university's character, lore and history, but because it made sense professionally. The university had offered to pay my tuition in exchange for teaching English composition to freshmen, so I was able to pursue my development as an artist in a financially responsible way. Other students may make similarly practical choices — and many of the things we come to love about the university are based on individual experiences rather than our appreciation for school spirit and tradition. I, for instance, spent two years studying writing, and I didn't learn the story behind the Bear Down motto until I got a job here and became responsible for understanding the university's story.

Now I spend a lot of time thinking about the origins of "Bear Down" and John "Button" Salmon. If you think about his story, it's remarkable: John died as the result of a car accident before a football game almost 100 years ago, and that tragic event has forever shaped the U of A.

But see, I'm already making some assumptions. Some people reading this — including alums — may not know the official Button Salmon story.

According to alumni.arizona.edu, John Byrd "Button" Salmon was a popular campus figure — student body president, varsity quarterback, baseball catcher — who was returning from Phoenix with friends when an automobile accident near Florence left him critically injured. Aged just 22, Salmon lost his battle and died Oct. 18, 1926. The football coach at the time, J.F. "Pop" McKale, visited Salmon in the hospital before his death and shared Button's last message with the football team: "Tell them ... tell the team to bear down." History isn't clear about whether McKale invoked the phrase to the team before a game against New Mexico A&M that same week or two weeks later before a game against New Mexico in Tucson. But it doesn't matter: The Wildcats won both.

"'Bear Down' essentially means 'grit your teeth and do the thing that you know will be hard.'"

And that's the story, which makes me wonder what would have happened if the Wildcats had lost and what it was about Salmon that made his dying words a rallying cry. Perhaps some of it is contextual: In 1926, there were fewer students on campus, so it was probably easier to be popular and well-known. But, why, even today, do his dying words stir the spirit?

The U of A community now embodies the spirit of "Bear Down" even without actively attributing it to Salmon's memory. His famous phrase has become symbolic — mythic — and it permeates how we see ourselves as Wildcats. Perhaps it was never completely about him. Maybe Button's tragic story simply lifted a mirror for the institution to articulate itself for the very first time: We are a university, in the harsh Sonoran Desert, that understands struggle, that understands the power of community and hard work and the triumph of pursuing things that feel impossible to achieve.

Given our history, this makes sense, but it's also surprising. As an institution that advocates for innovation and progress, both in our research and student experiences, it's interesting that we tie our core identity to such a deeply tragic story. "Bear Down" essentially means "grit your teeth and do the thing that you know will be hard." It's the feeling the football team had after losing their starting quarterback and going on to win without him — relishing in adversity and the resilience to push through it.

"Bear Down" also represents the student experience. On the one hand, the university experience is about having fun, pursuing passions and boldly finding the best within yourself, but it can also be difficult: full of uncertainty, heartbreak, setbacks, breakthroughs, and then — hopefully — personal triumph. The spirit of "Bear Down," I think, acknowledges that personal struggle, the promise of triumphs to come and an appreciation for a college experience that allows one to step into a future self — a self forged by experimentation and occasional world-changing innovations. As Wildcats, we celebrate it all.

I think about my time as a student, and these ideas resonate. While I have many fond memories, I also have negative ones. Some of them are personal and unrelated to my studies, but I still attribute them to my time at the university and to my development as a whole, complicated person.

When I started writing this essay, I thought I'd go visit John "Button" Salmon's grave and tell you what it looks like. I'd stand next to it and meditate on what he really did, what that meant. But now I understand that none of that is necessary. I don't have to go anywhere; I don't need to illuminate something abstract and profound. And neither do you.

All I really have to do is think about who I am and what it took to get here. Think about what I'm grateful for, the opportunities I've been given and the people who took time to teach me. The joys of getting things done. The heartbreaks that made me. The dark, sweaty Tucson nights, the streetlights and neon of Fourth Avenue, the beer bottles and long talks about writing and meaning, the relentless sun, the saguaros standing together. Think about breakfasts with friends who still know me, who love me. Who watched me grow. The depth of how much we now know each other. How I met my wife here. My daughter. Her first words. The hope of things to come. The privilege a university has in making so many facets of past, present and future possible. ◆

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